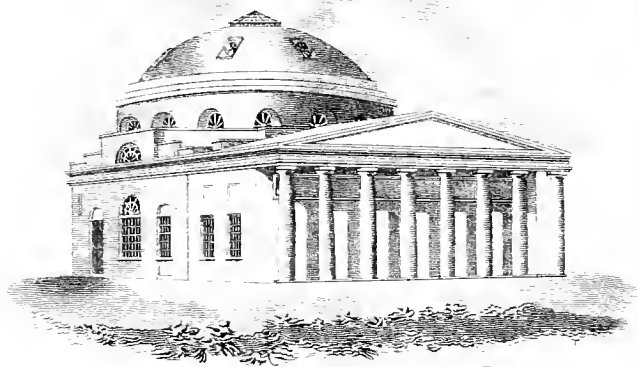




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Bulletin
OF THE
SCHOOL OF MEDICINE

UNIVERSITY OF MARYLAND

Vol. 37

1952



Bulletin OF THE SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

VOLUME 37

January, 1952

NUMBER 1

EDITORIAL

THE USES AND ABUSES OF ANTIBIOTIC THERAPY IN ORAL MEDICINE

The introduction of antibiotic therapy into oral medicine has caused a regression in the practice of rational therapeutics. The need for making a careful diagnosis before prescribing is apparently being disregarded. Physicians and dentists are treating infectious lesions without first discerning the etiologic factor(s) which inaugurated the focus or lowered the tissue resistance predisposing bacterial invasion.

The older basis of therapy, *vis medicatrix naturae*, is overlooked. No longer is it appreciated that nature cures and that pharmacotherapeutics is only an adjunct in treatment. When one antibiotic fails, the present tendency is to switch to another which has a larger bacterial spectrum.

While this kind of treatment has produced more spectacular results than were known in the past, the more critical members of the professions are noting the frequency of recurrence and chronicity. There is concern felt that the injudicious use of antibiotics may produce patient sensitization, thereby limiting the usefulness of these drugs. The development of antibiotic-resistant strains of pathogens is also a possibility, being more prevalent with some antibiotics and some organisms than with others.

In diseases which have a tendency to recur, the value of acquired immunity should not be overlooked. The use of the antibiotic agents to abort the infection may lead to recurrence and chronicity. In such cases the symptoms should be controlled to alleviate danger and prevent complications without sacrificing immunization.

Still more significant is the use of the antibiotic agents to abate the acute phase of infection without removing the predisposing factors, local and systemic. In oral medicine, infections are generally predicated by a lowered tissue resistance or the access of saliva to tissues having a low degree of local immunity, as in pulpal exposures and compound fractures. The local factors are generally of an irritant nature and should be eliminated or ameliorated by proper manipulative treatment. The systemic factors are those which debilitate the patient and impair tissue resistance. Toxic substances, such as drugs and heavy metals, also are predisposing factors. Antibiotic medication cannot be expected to bring lasting benefits unless these factors, local and systemic, are corrected.

The treatment of diseases of the teeth and their adnexa is strictly a dental problem. Surgery is more essential than medication, the antibiotic drugs being rarely indicated although often prescribed. The fields of stomatology and oral surgery are seen by both dentists and physicians and are of mutual interest. Here, the patient is generally ill and needs systemic as well as local treatment. The use of local and systemic antibiotic therapy is usually indicated for controlling the acute phase of the infection, however, this treatment alone is not adequate as the stomatitis, cellulitis, adenitis or osteomyelitis is generally a complication of a dental or paradental focus, which also must be treated.

There are vogues in pharmacotherapeutics, but fortunately the extreme swings are of short duration. The rationalization of antibiotic therapy as an adjunct to treatment, rather than *the* treatment, is becoming evident to the few, and eventually the information will be disseminated to the professions at large.

*Edward C. Dobbs, D.D.S.**

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THE END-RESULTS OF SURGERY FOR PROTRUDED LUMBAR INTERVERTEBRAL DISCS; A FOLLOW-UP STUDY OF 364 CASES OVER A SIX AND ONE HALF YEAR PERIOD*†

JAMES G. ARNOLD, JR., M.D.‡

From 1942 through 1948, 453 patients were operated on for the removal of lumbar intervertebral discs. Four hundred of these were private patients and 53 were treated at the U. S. Veteran's Administration Hospital at Fort Howard, Maryland. In January of 1949 a questionnaire was sent to each of these patients. Answers were received from 364. Forty could not be traced and the remaining 49 were not answered. One death, as a result of pulmonary embolism, occurred on the fourth postoperative day. This report, the analysis of the 364 returned questionnaires, evaluates the end-results over a six and a half year period.

In formulating the questionnaire (Table I), an attempt was made to obtain sufficiently detailed information so that the results could be evaluated as accurately as possible. It was gratifying that the majority of the returned questionnaires were answered with interest and care, and many of them were accompanied by explanatory letters. It is obvious that the evaluation of results by questionnaire is open to certain error and criticism, but, after analyzing this group, it is apparent that a reasonably accurate account of the end-results to date is obtained. In tabulating certain general information, the entire series of 364 cases was analyzed. In the evaluation of the results, however, the series was divided into several categories: (1) non-compensation, (2) compensation, (3) veterans, and (4) the combined operation—disc removal and fusion.

The type of operation used throughout this series was the classical interlaminar exploration with the removal of little or no bone. In the early part of the series, limited removal of the intervertebral contents was done, but the majority of cases were subjected to as complete a removal as possible through a unilateral exposure. Laminectomy was done in only a few cases where the patient had a massive central extrusion.

GENERAL INFORMATION

There were 242 males and 122 females in the group. Of these, 252 were white and 12 colored. The ages of the patients ranged from 16 to 77 years, the highest concentration being in the fourth decade, and the next highest in the fifth (Table 2). The distribution of patients in relation to the number of years follow-up is shown in Table 3; the duration of symptoms prior to operation is shown in Table 4. In all cases, the patients did not have continuous symptoms for the period indicated, but, rather the first attack of low back pain was considered as the beginning of the disease. It is of interest that only 22.6 per cent of the patients were operated on in whom the symptoms were of 6 months or shorter duration.

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† Read before The Society of Neurological Surgeons, Baltimore, June 10 1949.

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Myelography: Oil myelography was done much more frequently in the early part of the series than at present. In the 364 cases, Pantopaque® or Lipiodol® myelography was done in 57 cases. In 45 cases (78.9 per cent) the myelographic defect was found to be correct at operation; 9 cases (15.8 per cent) showed no defect but a disc was found at operation; and three cases (5.3 per cent) showed a defect but no lesion was found. Except in atypical cases, it is believed that a careful clinical evaluation is much more important than myelography. The procedure is, therefore, considered an adjunct, rather than a diagnostic measure to be done routinely.

TABLE I
QUESTIONNAIRE

1. Please put an X after one of the following statements:
 - a. I think the operation cured me. _____
 - b. I think the operation helped but did not cure me. _____
 - c. I think I am about the same as before the operation. _____
 - d. I think I am worse than I was before the operation. _____
2. Are you working? _____ When did you return to work? _____
 - a. What kind of work are you doing? _____
 - b. What kind of work did you do before operation? _____
 - c. What kind of work did you do before the trouble started? _____
 - d. Does working bother your back? _____ Leg? _____
 - e. Are you getting compensation now? _____ If you were on compensation, how long did you receive it after operation? _____
 - f. Have you had to give up athletics since operation? _____
3. Do you have any pain in the back? _____ If so, is it mild? _____
Moderate? _____ Severe? _____
4. Do you have any pain in the leg? _____ If so, which one? _____
Any numbness? _____ Any weakness? _____
5. How soon after operation did your leg pain disappear? _____
Back pain? _____
6. If you do not have any pain at present, have you had any attacks of back or leg pain since operation? _____ If so, give dates. _____
7. Has any further operation been done on your back? _____ If so, when? _____
8. Do you wear a back support? _____
9. How long were you disabled before operation? _____
10. Are you glad or sorry you had the operation? _____

The Sign of Interlaminar Tenderness: The diagnostic and localizing value of this procedure is of considerable importance. The statistical data as to its accuracy has been published elsewhere (1).

OPERATIVE FINDINGS

In the 364 cases, 391 intervertebral discs were removed. Multiple discs were found in 47 cases, or 12.9 per cent, and exploration was negative in 21 cases, or 5.8 per cent. Of the 391 discs removed, 211 (55 per cent) were herniated and 176 (45 per cent) were ruptured.

Early in the series, exploration at more than one space was seldom done, but for a short period around 1945, the fourth and fifth spaces were explored routinely. The

finding of multiple discs was unquestionably higher when the fourth and fifth spaces were thus explored, since it is difficult to distinguish between a slight herniation and a normal intervertebral cartilage. Testing the resiliency of the posterior longitudinal ligament with forceps is not an absolute criterion. If the nerve root is adherent to the posterior longitudinal ligament or if there is a definite decrease in the extradural fat around the root, the underlying disc is apt to be defective. After the exposure of an intervertebral space, there is always the temptation to remove the

TABLE 2
Age Distribution

16-20 years.....	12 cases
21-30 years.....	61 cases
31-40 years.....	110 cases
41-50 years.....	99 cases
51-60 years.....	54 cases
61-70 years.....	18 cases
71-77 years.....	2 cases
Total.....	356 cases

TABLE 3
Distribution of Cases in Relation to Follow-up Period

6 to 6½ years.....	14 cases
5 to 6 years.....	24 cases
4 to 5 years.....	37 cases
3 to 4 years.....	51 cases
2 to 3 years.....	77 cases
1 to 2 years.....	84 cases
6 mos. to 1 yr.....	77 cases

TABLE 4
Duration of Symptoms

Under 6 months.....	82 or 22.6%
6 mos. to 1 yr.....	59 or 16.2%
1 to 2 years.....	60 or 16.5%
2 to 5 years.....	75 or 20.6%
Over 5 years.....	88 or 24.1%

disc if there is any question in the operator's mind. It is our practice at present not to explore more than one space if we feel that adequate cause for the trouble has been found; if not, multiple spaces obviously have to be explored. In only one case were three discs removed, and there were only three cases in which the posterior longitudinal ligament was ruptured at two spaces. The results in the cases of multiple discs will be discussed in a later paragraph.

The term "herniation" is used to include those discs in which no tear in the posterior longitudinal ligament could be demonstrated. It also includes a small number

of cases in which the nerve root was adherent to the posterior longitudinal ligament with very little herniation. The term "rupture" indicates a tear in the posterior longitudinal ligament with either extrusion of fibrocartilage into the spinal canal, or a round mass of fibrocartilage encapsulated by a very thin membrane—the slightest pressure on which causes spontaneous extrusion. True herniation indicates pathologic change in the intervertebral cartilage just as surely as frank rupture. The real problem is to distinguish between slight herniation and a normal disc.

Location of Intervertebral Discs: Of the 391 intervertebral discs removed, 159, or 40.7 per cent, were on the right side; 226, or 57.8 per cent, were on the left; and 6, or 1.5 per cent, were central. As to interspace 1 disc (.3 per cent) was removed at the level of the second lumbar vertebra, 7 (1.8 per cent) at the level of the third lumbar vertebra, 160 (40.9 per cent) at the level of the 4th, and 223 (57 per cent) at the level of the fifth (Figure 6).

Re-Operation: Of the 364 cases, 27, or 7.4 per cent, required re-operation. Thirty operations were done on these 27 patients with 2 cases being operated on more than twice. In the 25 cases requiring one re-operation, re-exploration was done at the same space on the same side in 10 cases, at the same space on the opposite side in 8 cases, at a different space on the same side in 6 cases, and at a different space on

TABLE 5
Results in 325 Cases of Disc Removal Analyzed According to Status

	NON-COMPENSATION	COMPENSATION	VETERANS
Cured	130-54%	10-20.8%	9-25%
Helped	94-39%	27-56.3%	22-61.1%
Same	5-2%	9-18.8%	2-5.6%
Worse	11-4.6%	2-4.1%	3-8.3%
Died	1-.4%		

the opposite side in 1 case. The advisability of doing bilateral exploration hasten of been considered, but after finding only 8 cases which required re-operation on the opposite side at the same space, bilateral exploration does not seem warranted.

ANALYSIS OF RESULTS

In the analysis of the questionnaires, a division into 2 groups was made: (1) simple disc removal, and (2) the combined operation of disc exploration and spinal fusion.

In the disc series there were 325 cases with the following results: cured—149 (45.9 per cent), helped—143 (44 per cent), same—16 (4.9 per cent), worse—16 (4.9 per cent). One patient died. This group was further subdivided into three categories: non-compensation, compensation, and veterans. The results are shown in Table 5.

In the combined operation group there were no veterans and only two compensation cases. Thirty-nine patients were subjected to this procedure with the following results: cured—22 (56.4 per cent), helped—16 (41 per cent), worse—1 (2.6 per cent).

Results in Multiple Discs: Since there were 47 cases in which more than one disc was removed, it seemed pertinent to analyze this group separately for results. Of the 47 cases, 21 (44.7 per cent) were cured, 23 (48.9 per cent) were helped, and 3 (6.4 per cent) were worse.

Occupational Data: Information from 344 cases as to whether or not they were working at the time the questionnaire was answered is as follows: 93.9 per cent replied in the affirmative and 6.1 per cent in the negative. The percentage of patients working in the non-compensation group was 96.4 per cent, as contrasted with 82.6 per cent of the compensation group. A complete analysis of this category is shown in Table 6. Twenty cases could not be tabulated because they had not followed any occupation prior to operation.

Athletic Status: There were 255 replies to this question. In the disc group, 113, or 52.5 per cent, stated that they had given up athletics since operation and 102, or 47.5 per cent were able to continue with athletics. With the combined operation, 18,

TABLE 6
Working or Not Working

Out of 344 cases the results were as follows:

	NON-COMP.	COMP.	VETERANS	COMBINED OP.	TOTAL
Working	221-96.4%	38-82.6%	31-91.2%	33-94.3%	323-93.9%
Not Working	8- 3.6%	8-17.4%	3- 8.8%	2- 5.7%	21- 6.1%

TABLE 7
Back Pain—Post-Operative

	DISC REMOVAL	DISC AND FUSION
No Pain	113 or 35%	14 or 38.9%
Mild Pain	107 or 33.4%	13 or 36.1%
Moderate Pain	77 or 24.1%	8 or 22.2%
Severe Pain	24 or 7.5%	1 or 2.8%

TABLE 8
Leg Pain—Post-Operative

	DISC REMOVAL	DISC AND FUSION
Yes	179 or 55.4%	18 or 48.7%
No	144 or 44.6%	19 or 51.3%

or 60 per cent, had given up and 12, or 40 per cent, had not. In the interpretation of these figures it should be remembered that many of the patients who answered these questions engaged in athletics only infrequently pre-operatively.

Analysis of Postoperative Symptoms: Table 7, pertaining to postoperative back pain, is self-explanatory. Table 8 is an analysis of postoperative leg pain. It will be noticed that 55.4 per cent in the disc series stated that they had some leg pain, whereas 45.9 per cent had been classified as cured. This discrepancy is accounted for by the fact that if the patient stated he had occasional or very slight pain it was recorded in the "Yes" column. Postoperative numbness is shown in Table 9. Table 10 is of interest in that 34.4 per cent stated that they had some postoperative weakness. Many patients interpret numbness and paraesthesia as weakness. I think this

accounts for the unusually high percentage of so-called weakness as reported in the questionnaire.

Table 11 is a summary of patients who required a back support following operation.

Glad or Sorry: As a final check, each patient was asked whether he was glad or sorry that operation had been done. The response was as follows: In the cases of disc removal, 301 (92.6 per cent) stated they were glad and 23 (7.4 per cent) sorry. In the group who had the combined operation, 38 (97.4 per cent) stated they were glad and 1 (2.6 per cent) sorry. There is an interesting discrepancy which shows up

TABLE 9
Subjective Leg Numbness—Post-Operative

	DISC REMOVAL	DISC AND FUSION
Yes.....	152 or 48.3%	16 or 44.5%
No.....	163 or 51.7%	20 or 55.5%

TABLE 10
Subjective Leg Weakness—Post-Operative

	DISC REMOVAL	DISC AND FUSION
Yes.....	106 or 34.3%	13 or 36.1%
No.....	203 or 65.7%	23 or 63.9%

TABLE 11
Back Support—Post-Operative

	DISC REMOVAL	DISC AND FUSION
Yes.....	51 or 16.2%	12 or 31.6%
No.....	239 or 76.1%	25 or 65.8%
Sometimes.....	24 or 7.7%	1 or 2.6%

at this point. In the disc series 89.9 per cent of the patients were classified as either helped or cured, but 92.6 per cent of the same group replied that they were glad surgery had been done.

SUMMARY

A six and one half year follow-up study of 364 patients subjected to lumbar intervertebral disc surgery is reported.

REFERENCE

ARNOLD, JAMES G., JR.; The "sign of interlaminar tenderness", an important aid in the diagnosis and localization of intervertebral disc protrusions. *Bulletin of the School of Medicine, University of Maryland* **35**: 145 (Oct.) 1950.

A SHORT HISTORY OF DERMATOLOGY AS IT PROGRESSED IN BALTIMORE

HARRY M. ROBINSON, SR., M.D.*

That day is fast approaching, when those who worked and studied with the dermatologic pioneers of yesteryear will have passed from the familiar Baltimore scenes, and none will be left who can talk with any degree of authority about how those notables taught and investigated during the formative years of this special branch of medicine.

PART 1

There remain but two who were actual staff members when some of these authoritative men directed our ways and showed us how to teach and diagnose dermatologic conditions. Therefore, it appeared desirable that one of us who had been with them and who has been a sort of liaison contact with the first of our specialty, should try to tell us as completely as possible the story of dermatology as it was born and developed in Baltimore.

Dermatology has been slow in gaining its proper recognition as a branch of medicine both as a specialty and as a department in the medical schools of Baltimore. This may, in part, result from the aversion to all specialists in medicine and surgery which was held throughout the nineteenth century and is still evinced to some extent today. Such a fact was the main theme of the presidential address of James C. White at the first convention of the American Dermatological Association held in 1877. He discussed "our relations to the profession at large and to the public;" and asked, "are they what they should be in all respects? The hostility which at first existed against all specialties affected that of dermatology also, and has not yet wholly subsided."

Although American Dermatology actually began in New York City with the opening of the Broome Street skin dispensary in 1836, in Baltimore diseases of the skin did not receive official medical school recognition until the fall of 1879 when it was announced in the catalogue of the University of Maryland that Dr. Isaac Edmondson Atkinson had been appointed clinical professor of Dermatology and that every Saturday during the medical school session 1 hour would be allotted for dermatology, with the following explanatory statement:

"The course of lectures upon dermatology will be chiefly clinical didactic lectures, will be delivered upon the anatomy, physiology and pathology of the skin. These will, however, be limited in number and are designed to prepare the student for a proper appreciation of morbid conditions as observed in practice. The lectures will be illustrated by diagrams, microscopical specimens, models, etc., and it is proposed to afford the student ample opportunities for the personal examination of those patients who will supply the materials for teaching. Therapeutics will receive special attention and the lecture will be devoted to those forms of skin diseases, a knowledge of which is most essential to the General Practitioner. When necessary, the microscope will be employed before the class as a means of diagnosis."

Read before the Section on Dermatology, Baltimore City Medical Society, November 26, 1951.

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Although dermatology did not receive official medical school recognition until 1879 there were numerous indications that there were some dermatologically minded and trained physicians in Baltimore. For as early as 1848 the following diseases were included in the University of Maryland Hospital annual report:

Impetigo 3 (the word contagiosa not mentioned)	Varicella 1
Psoriasis 4	Rubeola 6
Prurigo 2	Scarlatina 1
Lepra vulgaris 1	Erysipelas 12
	Purpura 3

In the Hospital report of 1859-1860 the following optimistic report appears:

*"of 114 cases of syphilis
90 cured
14 relieved"*

Furthermore, several papers appeared on dermatologic subjects in the Maryland Medical Journal, a few of which seemed to excite interest. In 1857, A. B. Arnold, who had come to America from Germany in 1820, wrote a treatise on scleroderma. In 1870, he became Professor of the Principles and Practice of Medicine at the Washington University School of Medicine.

In 1881 Charles F. Bevan, of the College of Physicians and Surgeons, wrote on purpura hemorrhagica.

That same year, Christopher Johnston wrote on epithelioma of the penis.

A physician whom one would have expected to figure more in dermatological circles in the medical schools, but who apparently held no faculty position at any time, was John Morris. He was active in medical society meetings and at one time vice-president of the American Medical Association. Morris frequently discussed skin conditions at medical meetings and wrote on many subjects, some of which follow:

*On Scarlatina (1873)
Vaccination (1874)
Prevention of Venereal Disease (1875)
Yellow Fever (1878)
Pediculophobia (1880)*

He was also associate author with Duhring of a textbook on Skin diseases and Hygiene. This book was recommended to students at the College of Physicians and Surgeons in 1882.

In 1878 Julian Chisolm contributed his work on electrolysis of wild hairs.

In 1874 Louis McLane Tiffany wrote on syphilis of the lung.

In 1875 I. E. Atkinson published his paper on fibroma molluscum and in 1877 another on inherited syphilis and early syphilis in the negro.

In 1878 Thomas Richardson Brown attended the American Dermatological Association and spoke on the syphilides. He also wrote on the initial lesions of syphilis, for the Maryland Medical Journal, and "The Harelip and Cleft Palate in Syphilis."

In 1876 fourteen physicians interested in dermatology met and decided to form a dermatologic society which they called the American Dermatological Association.

Their first actual meeting in 1877 was held in the Cataract House at Niagara, New York. This proved to be an event of tremendous importance and certainly had its effect on Baltimore dermatology. Of this first group of fourteen men, one was a Baltimorean, Isaac Edmondson Atkinson, actually the first officially designated Baltimore dermatologist. Three years later in 1879 dermatology was officially acknowledged in Baltimore as a separate specialty with I. E. Atkinson appointed Clinical Professor of the skin department at the University of Maryland.

For a study of the growth of dermatology in Baltimore, it is necessary to realize that during the formative years of this specialty there were seven medical schools in the city, all of which took some part in the teaching of the subject to students. These colleges in chronologic order, are:

University of Maryland, School of Medicine, 1807—

College of Physicians and Surgeons 1871 to 1915

Baltimore Medical College 1881 to 1913

Womans Medical College 1882 to 1910

Baltimore University, School of Medicine 1884 to 1907

Johns Hopkins University, School of Medicine 1893—

Maryland Medical College 1898 to 1913

Since 1915, only two medical schools have continued to function; the remainder having become extinct or as in the case of the Baltimore Medical College and the College of Physicians and Surgeons, combined with the University of Maryland School of medicine.

One other medical college, The Washington University School of Medicine, figures slightly in the history as Abram B. Arnold, Professor of Practice of Medicine was interested in and wrote on dermatologic conditions. This school, however, joined with the College of Physicians and Surgeons in 1877. There was also a homeopathic school of medicine, the Atlantic Medical College, but as far as I could determine, it never had a course in dermatology.

UNIVERSITY OF MARYLAND

I. E. Atkinson, remained head of the Department of Dermatology at the University of Maryland until he retired in 1897 when he was succeeded by T. Caspar Gilchrist, as Clinical Professor of Dermatology, and who in 1917 became Professor of Dermatology serving at the same time as Clinical Professor of Dermatology at the Johns Hopkins School of Medicine. At Gilchrist's death in 1927, Melvin Samuel Rosenthal, who had been head of the Department of Genito Urinary Surgery and Dermatology at the College of Physicians and Surgeons before it united with the University of Maryland, became Professor of Dermatology at the University of Maryland. He died in 1933 and four years later, Harry M. Robinson became Professor of Dermatology. The department is now headed by him and a corps of six diplomates, certified by the American Board of Dermatology and Syphilology.

THE COLLEGE OF PHYSICIANS AND SURGEONS

It is noteworthy that the designation of a course in dermatology at the University of Maryland in 1879 was followed in a year or two by the announcement of similar

courses at the other medical schools. The first of these was at the College of Physicians and Surgeons with the appointment of Archibald Atkinson in 1880 as Professor of *Materia Medica*, Therapeutics and Dermatology. Medicine was a three year course at this time and diseases of the skin was taught in the second year. "Pifford on Skin-Diseases" was the text advised.

George Henry Rohé was appointed Clinical Professor of Dermatology in 1881. He preferred Morris' book on skin diseases. This book was apparently a revision of Duhrings book and was entitled, "Skin Diseases and Hygiene" by Duhring and Morris. In 1882, Rohé began a course of twelve one-hour lectures on skin diseases and hygiene, (the latter word indicating venereal diseases). In 1888 Rohé became Professor of Dermatology and Hygiene. In spite of the fact that he took over the chair of Obstetrics in 1890 he continued to lecture on skin diseases at noon on Saturdays. At this time the text in use was by Rohé, actually the first book on skin diseases to originate in Maryland. In 1891 Jere Williams Lord became lecturer on skin diseases at the College of Physicians and Surgeons and the text book on skin was one carrying the names of Rohé, Lord, and Hardaway, (the last named being a pioneer in electrolysis).

In 1893 dermatology was relegated to a mere mention, with an examination given in the first half of the third year, but no lectures were provided.

William Flood Smith, in 1894, was appointed Clinical Professor of Dermatology, Associate Professor of Genito-Urinary Surgery and Demonstrator of Anatomy. In 1894 there was mention of lectures in dermatology but apparently there was only a one-hour clinic once a week.

In 1896 William F. Smith became Professor of Anatomy, retaining the title of Clinical Professor of Dermatology.

In 1897 a fourth year was added to the medical curriculum and dermatology was given as a fourth year course with classes throughout the school year on every Saturday from 12 to 1 p.m.

Sylvan H. Likes became Associate Professor of Genito-Urinary Surgery and Dermatology in 1900, and in 1901 Melvin Samuel Rosenthal was appointed Associate Professor of Genito-Urinary Surgery and Dermatology, which position he held until this institution was taken into the University of Maryland in 1915. Following the death of T. Caspar Gilchrist, Professor of Dermatology at the University of Maryland, the course in Dermatology, which consisted of one hour demonstrations of skin diseases and syphilis every Monday throughout the school year, was equally divided between M. S. Rosenthal and H. M. Robinson. In 1929 Rosenthal became Professor of Dermatology at the University of Maryland, which he held until his death in 1933. In 1937 as already stated, Harry M. Robinson became Professor.

BALTIMORE MEDICAL COLLEGE

Baltimore Medical College which was founded in 1881 and which closed its doors in 1913 when it united with the University of Maryland, first announced its interest in dermatology by including mention of this branch in 1885, but without naming a department head. In 1887 William Lee, Professor of Diseases of Children, embraced dermatology but with no specific schedule of instruction. His title was Professor of the Diseases of Children, Hygiene (meaning Venereal Diseases) and Dermatology.

In 1890 there is specific mention of a course stating that "there will be delivered a thorough course of lectures on diseases of the skin and in addition to clinics, the microscope will be used where needed and numerous plates of different diseases will be shown." In 1892 Allen Kerr Bond was made Professor of Diseases of Children and Dermatology. T. Caspar Gilchrist was appointed Clinical Professor of Dermatology in 1896 and was replaced 2 years later by Jere Williams Lord. One more and final change occurred when Edgar R. Strobel took the chair with the title of Clinical Professor of Dermatology. This he held until 1913 when the institution ceased to exist as such.

WOMANS MEDICAL COLLEGE

Next in chronological order we consider the Womans Medical College which was founded in 1882 and ceased functioning in 1910.

The first mention of dermatology was in 1899 when Sylvan Likes was named Clinical Lecturer on Dermatology. In 1902 John R. Abercrombie became Clinical Lecturer on Dermatology but was, in addition, Lecturer on *Materia Medica*.

BALTIMORE UNIVERSITY SCHOOL OF MEDICINE

The Baltimore University School of Medicine began its course of instruction in 1884. The first to teach dermatology was Alfred Whitehead who was born in London and came to Baltimore in 1882. He was Professor of Diseases of Children and Dermatology and gave an organized course of lectures and clinics. In 1896 Louis C. Horn became Professor of Diseases of Children and Dermatology and gave lectures on skin diseases every Monday.

From 1900 to 1903, only two names are recorded—J. T. McCarthy and John G. Jeffers respectively and each had the title of "Lecturer on Diseases of the Skin".

MARYLAND MEDICAL COLLEGE

The Maryland Medical College opened its doors in 1898 and closed them in 1913. William Herbert Pearce was Clinical Professor of Diseases of the Skin during the opening years. In 1903 he became Professor of *Materia Medica*, Therapeutics and Clinical Medicine and H. C. Hess was made Lecturer on Skin Diseases.

In 1904 J. B. Schwatka, who was Dean, became Professor of Dermatology, but gave up the chair on skin diseases to become Professor of Clinical Medicine, whereupon, H. C. Hess, who had been lecturer was promoted to Clinical Professor of Dermatology and held this to the closing of Maryland Medical College in 1913.

JOHNS HOPKINS HOSPITAL AND SCHOOL OF MEDICINE

Johns Hopkins Hospital opening in 1889, started its Medical School in 1893; the first class graduating in 1897. In the years before the medical school opened there was no chair or designated department of dermatology. There was a dispensary department of Dermatology which in 1889 was under the supervision of Robert Brown Morison, who with Atkinson and Rohé were the real stalwarts of dermatology and who since 1885 had been members of the American Dermatological Association.

Morison was active in the General Journal Club, and frequently reported papers on skin diseases and allied subjects. His lectures on skin diseases were as follows:

on May 22, he lectured on the anatomy of the skin, hyperemias, erythemas and eczema; on May 29, his subject was, parasitic diseases of the skin; and on June 5, the application of remedies for the common forms of skin diseases.

In 1891 the announcement was made that "a clinical weekly lecture, clinic or classroom demonstration in diseases of the skin will be given by Dr. Morison, dermatologist, during January, February, and March 1892." At this time dermatology was under the domain of Surgery, just as it was at the University of Maryland.

Assisting Morison were Jere Williams Lord and T. Caspar Gilchrist. Gilchrist also lectured on skin diseases to the nurses of the Johns Hopkins Hospital. Morison continued as Dermatologist until 1893 when he became ill, dying in 1897. One year after his death, T. Caspar Gilchrist was made Clinical Professor of Dermatology. And, as up to this time Jere Williams Lord had shared equal rank, he was also made Clinical Professor in Dermatology, a title which both held until their deaths.

In 1928 Lloyd Warren Ketron, who had been successively Assistant Clinical Dermatologist 1914-1916, Instructor 1916-1918, and Associate 1918, became Associate Professor, a position which he has held up to the present time.

PART 2

It is well to realize that any history which concerns itself with events which build toward a pinnacle is far more concerned with the men who shaped those events. As one great Baltimore physician, Harry Friedenwald, has phrased it, "I have brought together all that I could find relating to the lives and labors of those who, in the earlier years of this century and in our own city tilled the soil" for what we dermatologists still hope will reach a top level in the practice of medicine.

It is not easy to select a few men who symbolize dermatology in its budding stages, without neglecting many deserving names; but with the hope that readers will withhold criticism because any one name might have been overlooked, the following have been chosen about whom I feel more specific mention should be made.

Isaac Edmondson Atkinson

Robert Brown Morison

George Henry Rohé

Thomas Caspar Gilchrist

Jere Williams Lord

I have chosen these for special homage because:

I. E. Atkinson was the first officially designated dermatologist in the first department of dermatology in Maryland at the University of that name. He was a charter member of the American Dermatological Association and its president in 1887.

R. B. Morison was the first chief dermatologist at the Johns Hopkins Hospital and president of the American Dermatological Association in 1893.

George Henry Rohé was one of the three Marylanders who were members of the American Dermatological Association in 1885. He was the author of the first text on dermatology written by a Marylander and published by Thomas and Evans in 1885-1888. This was followed by a "Text book on Hygiene" (Venereal Diseases) by Rohé and Albert Robin, published by F. A. Davis Company in 1885.

Thomas Caspar Gilchrist who followed both Morison and Atkinson had the distinction of being head of the dermatology departments of two University Medical Schools simultaneously, Maryland and the Johns Hopkins. He was President of the American Dermatological Association in 1909. His most distinctive contribution was the discovery of the cause of blastomycetic dermatitis.

Jere Williams Lord, with T. C. Gilchrist shared the first medical school title in Dermatology at the Johns Hopkins University School of Medicine.

ISAAC EDMONDSON ATKINSON

Isaac Edmondson Atkinson, who was the great first of these dermatology leaders, was not only the first to present Maryland Dermatology to the country as a charter



Isaac Edmondson Atkinson. The first physician to head an organized course in dermatology in Baltimore at the University of Maryland, and a charter member of the American Dermatological Association. The first dermatologist from Maryland to be President of the American Dermatological Association.

member of the American Dermatological Association, but also undertook to present the first organized course in dermatology in Maryland. He contributed to the first issue of the *Journal of Cutaneous Diseases* and was the first Baltimorean to be elected president of the American Dermatological Association. He was only in his 19th year when he graduated from the University of Maryland School of Medicine, having been born in Baltimore January 23, 1846.

He was the son of James E. Atkinson who had come to Baltimore from Easton, Maryland. He attended the Protestant Episcopal Church although his parents had been members of the Society of Friends. He was educated at the University of Maryland but did not attend long enough to get his arts and letters degree. Immediately after graduation in Medicine he served a professional apprenticeship in the old Baltimore Special Dispensary. He entered at once on the active practice of medicine and soon received an appointment as one of the vaccine physicians. He soon evinced a great interest in skin diseases and in the years before he was made Clinical Professor of Dermatology he wrote scientific articles on skin diseases for various state medical journals. In addition to holding the chair of Dermatology he held the chair of Pathology from 1881 to 1886 and the chair of Materia Medica from 1886 to 1900.

He served as Dean of the Medical School from 1890 to 1893.

In addition to being a charter member of the American Dermatological Association and holding the offices of Treasurer, Vice-President, and President, he was also president of the Clinical Society of Maryland and of the Medical and Chirurgical Faculty. His most important work was his contribution to Pepper's System of Medicine. He was consulting Physician to Johns Hopkins Hospital.

It was said of him that his was a strongly judicial mind and that he was ably competent to sift the chaff from the wheat, rejecting the useless while holding to the "golden grains of truth". In addition to his part in Pepper's System, he contributed far too many papers on dermatologic subjects to be included here, but a few of these were, *Eruptive Fevers and Their Contagiousness; A Case of Incomplete Vitiligo; Prurigo; A Case of Unilateral Idiopathic Cutaneous Atrophy; Pigmentary Syphiloderms; The Botanical Relatives of the Trichophytosis Tonsurans; Inherited Syphilis; Early Syphilis in the Negro; Cases of Fibroma Molluscum; Syphilitic Headache; Erythema Multiforme; Pruritus; The Etiology of Congenital Syphilis, Histologically Considered; Some Phases of Cerebral Syphilis; Treatment of Varicose Veins with Solid Rubber Bandage; The Use of Caustics in Dermatological Practice, with Special Reference to New Growths; Cutaneous Epithelioma; Contagious Vulvitis in Children; Kerion Celci, A Variety of Tinea Tonsurans.*

Atkinson was truly a pioneer of the dermatologic specialty and ably worked at it. In his address to the graduating class of 1882 he said "Your work will never be done; students you must remain to the very end of your lives. By study alone can you learn to appreciate the true nobility of your calling; by unremitting effort only, will you be able to feel that your living will be earned, and not won from a public unprepared to estimate your attainments at their true value".

GEORGE HENRY ROHÉ

This outstanding, if not the first Professor of Dermatology at the College of Physicians and Surgeons was a great man of humble beginnings.

He was born in Baltimore in 1851 of poor farmer parents. Early in life his father died and at the age of 12 he had to leave public school, and took a position as office boy to Dr. Augustus F. Erich. It was here that Dr. Aaron Friedenwald met him, and under the direction of these two brilliant gentlemen and physicians, Rohé was guided and directed in his readings and endeavors. It was said of him that "his refined

tastes, his charm of manner and the graceful freedom of his movements which characterized him as a man of the world, strongly suggested that he must have been reared in luxury and under the tenderest care", and yet he was without education except that which he taught himself.



George Henry Rohé. Author of the first textbook on skin diseases in Maryland. Also the first in Maryland to write a book on Hygiene (venereal diseases).

On the basis of the knowledge so obtained he was admitted to the University of Maryland School of Medicine in 1870 and graduated a Doctor of Medicine in 1873. Being at that time interested in dermatology he studied under the great dermatologist, E. Wigglesworth of Boston. He was assistant physician in the Boston dispensary for skin diseases in 1876. On his return to Baltimore he immediately became attached to the College of Physicians and Surgeons, and was made Professor of Clinical Dermatology in 1880. He wrote many papers on skin diseases and was present at the

meeting of the American Dermatological Association in 1879. During this year he wrote four papers on "Syphilis; Leprosy; Venereal Diseases; Premature Baldness." He contributed to the first issue of the Journal of Cutaneous Diseases. A few of his treatises follow: *The Pathology of Herpes Zoster, Clinically Considered; Tinea Trichophyllina or Ringworm; Cases of Syphilis in which the Infection Took Place in an Unusual Situation; Syphilis Communicated by a Bite; Tinea Tonsurans and Tinea Circinata; Treatment of Acute Eczema.*

In 1883 he was elected Treasurer of the American Dermatological Association.

In addition to writing many treatises on skin conditions, he was, as already stated, the author of the first text on dermatology to originate in Baltimore, the title of which was "*Practical Notes on the Treatment of Skin Diseases*" which was published by Thomas and Evans from 1885 to 1888. With Albert Robin he had published by F. A. Davis Co. from 1885 to 1908 (four editions) a "*Textbook on Hygiene*"; this latter word was used to indicate venereal diseases. In 1890 Rohé and Liebig wrote and published a book on Medical Electricity.

Oustanding as a dermatologist he gave up the chair of dermatology and became, in 1890, Professor of Obstetrics and Hygiene, retaining however the privilege of lecturing once a week (on Saturday) on skin diseases. In 1891 he again shifted his allegiance and became Professor of Materia Medica, Therapeutics, Hygiene and Mental Diseases. That he was still interested in dermatology is indicated by the fact that in 1893 he worked with Lord and Hardaway to bring out a new edition of his *Text on Skin Diseases*.

It is said that his associates frequently teased him, asking what his "latest specialty" was. In 1893 he was elected President of the American Association of Obstetricians and Gynecologists; and in that same year he was elected President of the Medical and Chirurgical Faculty of Maryland. He was appointed, in 1891, superintendent of the Maryland Hospital for the Insane; then superintendent of the Second Hospital for the Insane* in 1895. In 1898 he was elected President of the American Public Health Association.

He was also editor of "*The Medical Chronicle*" in 1882 and associate editor of the "*Independent Practitioner*".

When he was superintendent of Spring Grove Asylum he was asked when he intended to publish his work on mental disease. What did appear, solely as a result of his efforts was a lasting monument in the form of the Springfield Sanatorium. (Springfield State Hospital)

All in all he was "a man of broad culture, had a wide acquaintance with general science and the most varied literature."

Finally, he is the only dermatologist to have a bronze plaque among the list of immortals that grace the walls of the Medical Hall of Fame of the Medical and Chirurgical Faculty in Baltimore. He died in New Orleans, Louisiana in 1899.

ROBERT BROWN MORISON

Although a brilliant and gifted physician who held many important dermatologic positions during the few years of his life, Robert Brown Morison suffered the last ten

* Now the Springfield State Hospital, Sykesville, Md.

years of his life as an invalid and never attained the chair of dermatology at the Johns Hopkins Medical School. He was born in Baltimore March 13, 1853, the son of Nathaniel Morison, Provost of the Peabody Institute, and Sidney Buchanan Brown Morison. He received his early education at Phillips Academy, Exeter. In 1869 he entered Harvard University and later pursued his studies in Göttingen, Sweden. He was graduated in medicine from the University of Maryland in 1874. In 1881 he held



Robert Brown Morison. The first dermatologist of the Johns Hopkins Hospital. President of the American Dermatological Association, 1893.

the position of Professor of Chemistry, Urinary Analysis and Toxicology at the Womans Medical College. In 1882 he returned to Europe to do special work in dermatology. He studied under Pick and Chiari in Prague and with Neumann in Vienna and Unna in Hamburg. Later he continued his studies in Berlin. While in Europe he wrote frequent scientific letters to the Maryland Medical Journal, relating to dermatology and pathology, once suggesting in a letter that Baltimore would certainly profit by bringing Chiari, the pathologist, to that city. On his return to Baltimore in

1884 he was elected Professor of Dermatology in the Baltimore Polyclinic and Post Graduate Medical School, but he refused the position. In 1887 he was elected Clinical Professor of Dermatology in the University of Maryland but resigned this position to become chief dermatologist at the Johns Hopkins Hospital. Unfortunately, this appointment did not lead to the chair of Dermatology at the Johns Hopkins Medical School, because of his serious illness.

He was elected a member of the American Dermatological Association in 1885 and in 1893 was elected President of that Association.

Morison was a prolific contributor to American medicine both from Europe and after he returned to America. His presidential address before the American Dermatological Association was on "Cosmetics" and among his many other contributions were: "*Lupus and its Relation to Tuberculosis*;" "*Ergebnisse der behandlung von Hautkrankheiten mit Unnaschen Präparaten*;" "*Histological investigations of Lupus Erythematosus*;" "*Elephantiasis Arabum of the External Genitals of a Negress*."

He was considered in his day a fanatic on the subject of sanitation and hygiene, and he and his friend, the late Dr. William H. Welch, told many amusing stories of the criticisms that were made of their pioneer activities in these directions.

He read with equal ease in Latin, French, and German, and spoke French and German fluently.

Dr. Morison was not only "a distinguished dermatologist but in every sense a scholarly gentlemen".

THOMAS CASPAR GILCHRIST

Thomas Caspar Gilchrist was the first to hold the title of Clinical Professor of Dermatology at Johns Hopkins Medical School in 1898 and simultaneously the position of Clinical Professor of Dermatology at the School of Medicine University of Maryland (which he assumed in 1897). In 1917 he became Professor of Dermatology at the University of Maryland, a rank which he held until his death in 1927.

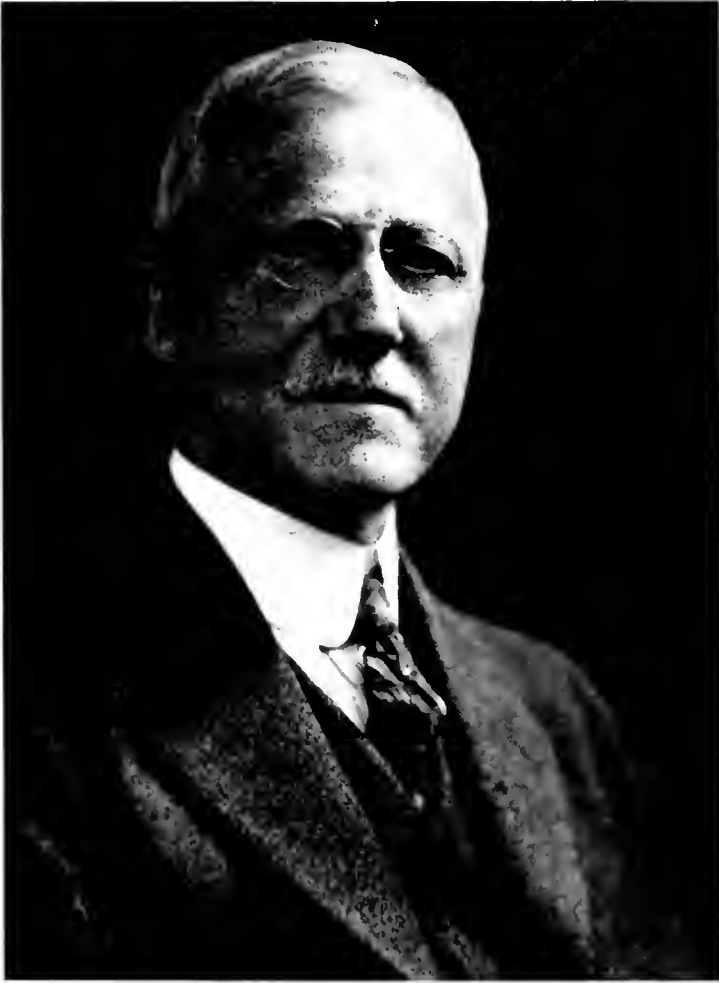
During the life and activity of R. B. Morison at the Johns Hopkins Hospital Dr. Gilchrist had been assistant dermatologist, becoming Associate in 1896.

He was born on June 15, 1862, at Crewe, Cheshire, England, the son of Robert and Emma Gilchrist. His early education was received at Fairfield Academy, Manchester. From 1882 to 1888 he studied at Owens College, Victoria University, Manchester. He graduated and received his M.B. degree in London, coming to America in October 1889. After a time spent with Duhring in Philadelphia, he came to Baltimore to practice medicine. In 1907 he was given the honorary title of Doctor of Medicine by the University of Maryland.

He jointed the staffs of both the University of Maryland School of Medicine and the Johns Hopkins Hospital and later the Johns Hopkins School of Medicine. At the Johns Hopkins Hospital he was made assistant dermatologist in 1892, becoming Associate in 1896 and Clinical Professor in 1898. In 1897 he took over the skin department at the University of Maryland with the title of Clinical Professor of Dermatology, becoming Professor of Dermatology there in 1917.

At the University of Maryland he held a weekly clinical demonstration showing several patients each week, explaining the diseases with the aid of his little compend on dermatology which was entitled "*Notes on Skin Diseases*".

He frequently worked in Dr. Welch's laboratory and made many scientific contributions of the highest value. Although he cultured the Acne Bacillus and was the first to make an Acne Vaccine, his most important contribution was the disease Blastomycetic Dermatitis and the isolation and proof of its cause, the double contoured



Thomas Caspar Gilchrist. The first to receive a title in dermatology at the Johns Hopkins Medical School, as clinical professor of dermatology. He was, at the same time, professor of dermatology at the University of Maryland. He became president of the American Dermatological Association in 1909.

spore, the *Blastomyces dermatitidis*. Being a gifted artist he drew the organisms as he saw them under the microscope and these drawings are still of great value today.

He was an art lover, especially of etchings, and frequently showed this author his great "finds" which he had bought at small cost and which had become worth many hundreds of dollars.

Gilchrist was a pioneer in radium and roentgen ray therapy and sustained injuries

to his hands while carrying on his work. He was probably the first to teach undergraduate medical students morphologic methods of diagnoses, and the first to do away with "dry" lecturing.



Jere Williams Lord. Lord was one of the first two dermatologists to hold the title of clinical professor of dermatology at the Johns Hopkins Medical School.

JERE WILLIAMS LORD

Jere Williams Lord, the son of John Deering and Jannett R. Williams Lord, was born in Portland, Maine, February 5, 1864. His ancestry dates back to Nathan Lord who came from England prior to 1650.

J. W. Lord was educated in public schools in Portland until 15 years of age and then

was tutored privately in Latin and Greek for two years. He entered the Johns Hopkins University and graduated with a Bachelor of Arts degree in 1884. He then went to the University of Pennsylvania and received his degree of Doctor of Medicine in 1887. He was resident physician in the Presbyterian Hospital in Philadelphia. On his return to Baltimore he joined the faculty of the Womans College of Medicine as demonstrator of anatomy in 1890.

This same year he was lecturer in dermatology at the College of Physicians and Surgeons and in 1893 he became associated with the Johns Hopkins School of Medicine as instructor in anatomy. From 1889 he was assistant dermatologist to the Johns Hopkins Hospital and Dispensary. In 1897 he was Professor of Dermatology at Baltimore Medical College and in 1900 became, in addition, Professor of Anatomy. With Rohé he revised Rohé's notes on skin diseases. He was a member of the American Medical Association, Southern Medical Association, and the American Dermatological Association.

In 1898 with T. C. Gilchrist, he was made Clinical Professor of Dermatology at the Johns Hopkins School of Medicine.

I had the pleasure and privilege of working with both Gilchrist and Lord in their departments.

As that great Baltimore Ophthalmologist, Harry Friedenwald, once said, "An old book tells us that each generation may be looked upon as standing on the shoulders of its fathers. If its vision is clearer, its intellectual view less obstructed, its horizon broader, it is in great part due to the height to which others have raised it, to the support others have given. Unmindful of this, it is apt to exaggerate its greatness and the importance of its own work." I have tried in this brief narrative to describe the lives and labors of those who in the earlier years of this century and in our own city, tilled the soil of dermatology. Some have been forgotten, few have been accorded deserved recognition.

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To preserve the historic continuity of this paper we publish herewith photographs of the present Professors of Dermatology at the University of Maryland School of Medicine and the Johns Hopkins University School of Medicine, Doctors Harry M. Robinson (left) and Lloyd W. Ketron (right).

A METHOD FOR THE QUANTITATIVE ESTIMATION OF COLLOIDAL RED TURBIDITY OF SERUM*†

MARIE A. ANDERSCH, Ph.D.

WITH THE TECHNICAL ASSISTANCE OF ADAM J. SZCZYPINSKI

Several liver function tests based upon quantitative and/or qualitative alterations in the plasma proteins are being used (1, 2, 3). Since positive results are probably dependent upon somewhat different mechanisms and one test may become positive before another (5), multiple tests, at least in an initial evaluation of a patient, are desirable. Neeffe et al. (4) have found that evidence of liver damage may be detected in a high percentage of patients by the routine use of the colloidal gold and the thymol turbidity tests than by either test alone, without thereby increasing the number of misleading positive results in patients with extrahepatic obstruction. Following their confirmation of Ducci's (1) findings that the colloidal red test apparently gave identical results with those for colloidal gold, they substituted this test for the latter because of its technical advantages.

If the colloidal red test was to be used routinely with the thymol turbidity test, it seemed desirable to reduce, if possible, the time required for the completion of the determination from 24 hours to one-half hour and to read the results in terms of the same turbidity units as those for thymol turbidity.

It was found that the degree of turbidity developed in 30 minutes by the addition of serum to a solution of colloidal red twice as concentrated as that used by Ducci (1) may be correlated with the results obtained by the original method.

REAGENTS

METHOD

1. *Buffer*. 0.639 Gm. of diethylbarbituric acid, 0.325 Gm. of sodium barbital and 0.2 Gm. of phenol are dissolved with the aid of heat in 100 ml. distilled water. (1)
2. *Colloidal scarlet red*. A saturated solution of scarlet red is prepared in 95 per cent alcohol maintained at 37 C. Ten ml. of this solution is raised to a temperature of 55 C and added to 50 ml. of distilled water raised to the same temperature. The mixture is then evaporated, at first slowly, and then more rapidly, until it is reduced to one-half of its original volume. It is then diluted to a volume of 400 ml.
3. *Copper sulfate turbidity standard*. (6) Two ml. of a 5 per cent solution of $\text{Cu SO}_4 \cdot 5\text{H}_2\text{O}$ is added to 8.5 ml. H_2O and read in the photoelectric colorimeter with a #66 filter. This is equivalent to 20 turbidity units.

PROCEDURE

To 0.1 ml. of serum, measured into a colorimeter tube, is added 1 ml. of barbital buffer and 5 ml. of colloidal red reagent. A blank, containing 0.1 ml. of water in place of the serum, is prepared at the same time. The tubes are inverted to insure mixing

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† Received for publication July 19, 1951.

and the turbidity measured thirty minutes later in a photoelectric colorimeter using a # 66 filter, with the instrument set at zero on the blank. The scarlet red has a negligible absorption at this wave length. The reading is multiplied by the previously determined factor to give the number of units.

DISCUSSION

The colloidal red turbidity, the colloidal red test, (1) the thymol turbidity (6) and the cephalin-cholesterol flocculation tests were run on a series of 104 specimens of blood taken from internes, medical students, technicians, and selected patients. The

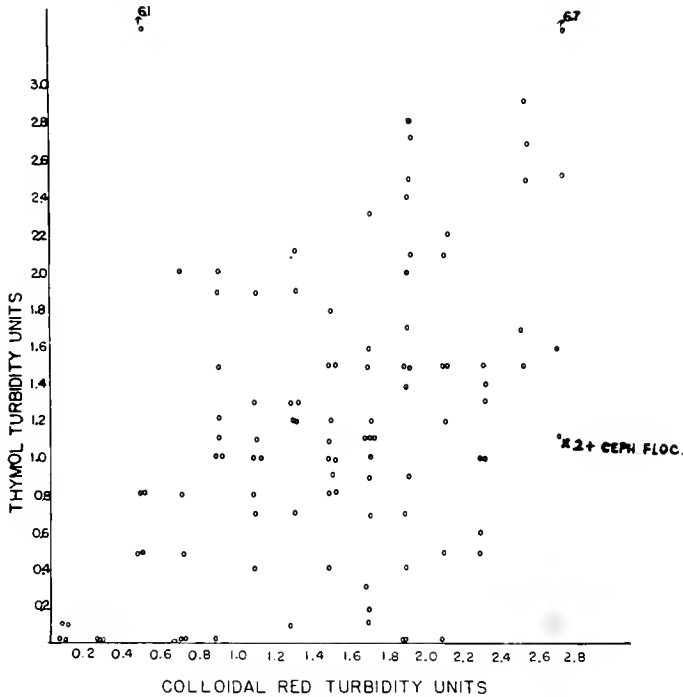


CHART 1. A comparison of thymol turbidity and colloidal red turbidity units on 104 serums from normal individuals. Colloidal red tests and cephalin-cholesterol flocculation tests were within the normal range, except as noted.

colloidal red test (24 hours) was negative in all subjects. The thymol turbidity and cephalin-cholesterol flocculation tests were negative, with the three exceptions noted in Chart 1. Although it is recognized that the two values for thymol turbidity above 6 are definitely in the abnormal range, they were included in the series because there was no apparent liver involvement. There is a positive correlation between the results obtained by the two tests although it is quite apparent that there may be wide variations in the unit value for the thymol turbidity obtained at a given level of colloidal red turbidity. The values for the colloidal red turbidity ranged from 0.0-2.8, with a mean of 1.5 and a standard deviation of 0.67. The values for the thymol turbidity tests ranged from 0.0 to 6.8 with a mean of 1.21 and a standard deviation of 1.0.

The upper limit of normal for colloidal red turbidity may be set at 3.0 units which is slightly greater than the mean plus twice the standard deviation. This value coincides with the upper limit of normal for the thymol turbidity found by Neefe (5), and used in this laboratory.

The colloidal red turbidity, the colloidal red test, thymol turbidity, and the cephalin-cholesterol flocculation tests were run on a group of 37 patients with ab-

TABLE 1

A comparison of four flocculation tests on a group of 34 patients with abnormal liver function

NUMBER OF PATIENTS	COLLOIDAL RED TURBIDITY	COLLOIDAL RED (24 HOURS)	THYMOL TURBIDITY	CEPH. CHOL. FLOCCULATION
22	+(3.0-6.4)	+(3+-4+)	+(3.3-9.8)	+(2+-4+)
5	+(3.5-6.0)	+(2+-4+)	-(2.0-2.7)	+(2+-4+)
3	-(2.7-2.8)	+(2+-3+)	+(3.4-6.8)	+(2+-3+)
1	+(3.1)	+(2+)	+(4.4)	-(1+)
3	-(2.0-2.8)	-(+-1+)	+(3.0-5.0)	+(2+-3+)

TABLE 2

DIAGNOSIS	NUMBER OF PATIENTS	COLLOIDAL RED TURBIDITY			THYMOL TURBIDITY		
		Range	Mean	Number above 3 units	Range	Mean	Number above 3 units
Infectious hepatitis.....	24	2.4-13.4	5.0	20	1.7-24.0	5.7	18
Homologous serum jaundice.....	7	2.5-13.4	7.3	6	3.6-14.2	6.6	7
Hepatic cirrhosis.....	11	3.5-8.9	5.0	11	1.2-9.1	4.9	6
Acute yellow atrophy.....	1	5.2		1	7.8		1
Bile Duct atresia.....	1	4.0		1	2.7		0
Hepatic carcinoma.....	2	1.7-2.7	2.2	0	1.1-1.2	1.1	0
Obstructive jaundice.....	8	0.0-2.0	1.3	0	0.4-3.3	2.0	2
Cholecystitis.....	6	1.9-4.9	3.1	3	1.6-5.6	3.0	2
Infectious mononucleosis.....	6	2.5-4.8	4.2	5	3.7-12.0	6.2	6
Thyrototoxicosis.....	5	1.8-5.0	2.8	1	1.1-6.2	3.4	3
Multiple myeloma.....	3	3.3-14.7	7.1	3	0.2-9.0	3.3	1
Hemolytic jaundice.....	1	4.0		1	4.9		1
Malaria therapy.....	4	1.6-7.4	4.4	3	1.9-9.4	5.3	3
Nephrosis.....	2	2.4-3.3	2.8	1	17.0-18.0	17.5	2
Miscellaneous.....	17	0.5-4.0	1.4	2.0	0-5.4	1.8	4
Colloidal red turbidity and thymol turbidity positive.....							46
Only colloidal red turbidity positive.....							16
Only thymol turbidity.....							12

normal liver function. The findings are tabulated in Table 1 according to the combinations of positive and negative results obtained in the four tests.

The colloidal red turbidity and the thymol turbidity were then compared on a group of a hundred patients who appeared to have some abnormality in liver function in the basis of increased Van den Bergh, prolonged prothrombin time, abnormal Albumin-Globulin ratio or one or more abnormal flocculation tests. The range and the mean of

the values obtained for colloidal red turbidity and thymol turbidity are given in Table 2.

The colloidal red turbidity paralleled the colloidal red test in the abnormal as well as in the normal range with the exception of three cases in which the colloidal red turbidities were close to the upper limit of normal, and the colloidal red tests were slightly positive. The thymol turbidity was positive in these cases. It would appear that as many positive results may be obtained by the use of the colloidal red turbidity and the thymol turbidity as by the use of the thymol turbidity and the colloidal red (24 hour) tests, with the additional advantage that the results may both be obtained in one half hour.

SUMMARY

A modification of the colloidal red test which may be read at the end of 30 minutes in terms of turbidity units is reported. The results of the colloidal red turbidity, the colloidal red test (24 hours), thymol turbidity, and the cephalin-cholesterol tests are compared on a group of 104 normal bloods and on 34 abnormal bloods. A comparison of the values for colloidal red turbidity and thymol turbidity are given for 100 cases.

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UNKNOWN INTRATHORACIC COMPLICATIONS DISCOVERED BY ROUTINE PRENATAL CHEST ROENTGENOGRAPHY*†

S. G. KOHL, M.D., D. FRANK KALTREIDER, M.D. AND C. W. DAVIDSON, M.D.

In January of 1944 a patient was delivered on the Ward Service at the University Hospital, Baltimore, Maryland, whose prenatal course and delivery were without incident. This patient had been registered in the prenatal clinic, where the usual examinations had been performed. These were all negative. In giving her medical history, she withheld information that she had been a patient in one of the State Tuberculosis Sanatoria. Immediately post-partum, she developed an elevation of temperature, which persisted in spite of the usual therapy. Upon further examination and consultation, including portable roentgen ray examination, a diagnosis of bronchopneumonia was made. The patient steadily deteriorated and died within several days. A post-mortem examination revealed the true etiologic agent. She had succumbed to a diffuse tuberculous pneumonia with large cavities in both apices.

This case and several similar ones which occurred prior to this time, stimulated the obstetric staff to consider the advisability of routine roentgenologic study of the chest of each new patient entering the prenatal clinic. In cooperation with the Department of Radiology, this was accomplished. Arrangements were also made to render the same service to private patients at a modest cost. Since then, all prenatal patients in the obstetric clinic of the University of Maryland, School of Medicine have been submitted to a routine teleroentgenogram of the chest. This routine has been followed continuously, except for a short period, during World War II, when film was scarce. At present the routine is slightly changed in that PFX (miniature photo-fluorograms) are taken routinely and checked with conventional chest films where indicated. This PFX film is attached to the patient's chart where it is always available for reference. This communication is an analysis of the first 4980 patients in this program and covers the period of the spring 1944 to December, 1947.

A partial review of the literature reveals that several similar studies have been reported. Kuss et al (1) in "Modern Aspects of Diagnosis and Classification of Tuberculosis" states; "1 to 6 per cent of all deaths in children from birth to 3 months of age are due to tuberculosis. From 3 months to 6 months of age, as high as 27 per cent of deaths reported are due to tuberculosis. More deaths in the first year of life are due to tuberculosis than in any other year of life". They felt that it was clear that control of the spread of tuberculosis to the new generation depended upon recognition of the disease in the potential mother, so that she could be prevented from unknowingly communicating the disease to her offspring.

In 1939, Ianne and Muir (2) used a routine tuberculin testing to screen their prenatal patients. All patients with positive reactions were submitted to roentgenography. Of their patients 41 per cent exhibited positive tests and were studied by the Department of Radiology. They discovered that of the 252 patients studied, 12 or 1.7 per cent

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† Received for publication June 1, 1950.

were positive for tuberculosis. None of these patients exhibited any clinical symptoms.

Eisele and Mason (3) had reported in 1938 an incidence of tuberculosis, discovered by roentgenography, of 1.06 per cent in their prenatal clinic as opposed to an incidence of syphilis of 0.87 per cent.

In 1942, Eisele et al (4) reported the results of a study of 10,968 routine roentgenologic studies on their prenatal patients. Of these white women 1 per cent were dis-

TABLE I
Distribution of Unknown Tuberculosis

CLASSIFICATION	WHITE	NEGRO	TOTAL
Active Parenchymal	0.12%	0.19%	0.18%
Inactive Parenchymal	0.59%	0.29%	0.34%
Healed Parenchymal	0.50%	0.29%	0.32%
Healed Mediastinal	0.80%	0.56%	0.60%
Total	2.01%	1.33%	1.44%

TABLE II

STATE OF DISEASE	WHITE		NEGRO		TOTAL	
	Cases	%	Cases	%	Cases	%
Inactive	2	0.25	8	0.19	10	0.20
Active	1	0.12	6	0.15	7	0.14
Total	3	0.37	14	0.34	17	0.34

TABLE III

STATE OF DISEASE	WHITE		NEGRO		TOTAL	
	Cases	%	Cases	%	Cases	%
Known	3	0.37	14	0.34	17	0.34
Unknown	17	2.01	55	1.33	72	1.44
Total	20	2.38	69	1.67	89	1.78

covered to have tuberculosis without clinical symptoms. They discovered that prior to their routine roentgen ray study only 1/10 as many cases were known during the prenatal period.

The following year, 1943, Tucker and Bryant (5), reported their results on the roentgen ray study of 1000 consecutive negro prenatal patients. They found that 1.8 per cent of these patients had active tuberculosis and that another 1.1 per cent had minimal tuberculosis. This gave them a total incidence of 2.9 per cent. These 2 studies revealed that the incidence was about twice as great in negro as in white patients. They concluded, "The findings of so high an incidence, especially in the

negro, in whom tuberculosis tends to run a more unfavorable course, serves to confirm the contention that routine chest roentgenologic examinations should be an indispensable part of the prenatal care of negro pregnant women”.

When one surveys the reports from hospitals where roentgenologic chest studies are not done routinely, an incidence of tuberculosis in pregnancy of 0 per cent—0.10 per cent or an average of 0.06 per cent is discovered.

TOTAL TUBERCULOSIS INCIDENCE

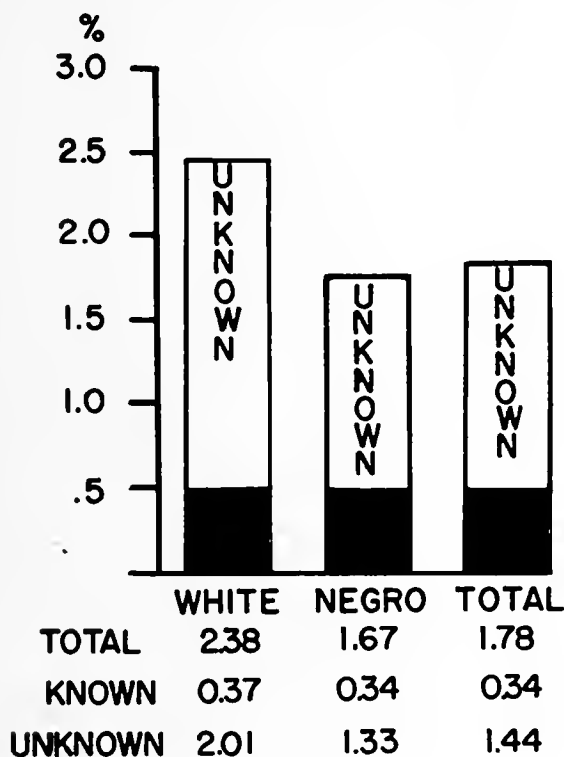


FIG. 1

Our statistical analysis shows that we uncovered:

1. 17 cases of unknown tuberculosis or 2.01 per cent among our 844 white patients.
2. 55 cases of unknown tuberculosis or 1.33 per cent among our 4136 negro patients.
3. This was a total of 72 cases or 1.44 per cent. (Table I)
4. There were also 17 cases of known tuberculosis encountered in the study. (Table II)
5. The total incidence of known and unknown tuberculosis is shown in Table III and Figure I.



These results reveal that we discovered fewer cases of tuberculosis than were found in the studies of Tucker and Bryant. Also our incidence is lower in negro patients than in white patients. This is the opposite of what had been anticipated. During the period under study our white patients were of the lowest possible economic strata, while our negro patients were a good cross section of Baltimore's negro population. We studied

TABLE IV

RACE	AGE	PATIENTS	CASES	PER CENT
N	Under 15	133	1	0.75
W	Under 15	7	0	0.00
N	16-20	1183	14	1.21
W	16-20	267	3	1.12
N	21-25	1303	18	1.37
W	21-25	276	7	2.53
N	26-30	807	11	1.36
W	26-30	163	4	2.47
N	31-35	432	6	1.35
W	31-35	88	2	2.20
N	36-40	232	4	1.72
W	36-40	37	1	2.63
N	Over 40	46	1	2.17
W	Over 40	6	0	0.00
Total.		4980	72	1.44

TABLE V

RACE	PARITY	PATIENTS	CASES	PER CENT
N	0	1038	15	1.44
W	0	310	2	.64
N	1-5	2615	33	1.24
W	1-5	479	15	3.10
N	6 or more	483	7	1.50
W	6 or more	55	0	0.0
Totals.		4980	72	1.44

our patients according to age; the results are found in Table IV. We then analyzed our patients by parity, and the results are found in Table V.

Of considerable interest to us and to our patients was the accidental findings of other serious disease. Fifteen patients (0.30 per cent) were found to have pulmonary or intrathoracic disease other than cardiac diseases. These diseases varied as follows:

Infiltrations other than tuberculosis.....	5
Mediastinal Mass.....	1
Diaphragmatic Hernia.....	1
Scoliosis with Compression of Lung.....	1

Boeck's Sarcoid	1
Emphysema, Right Upper	1
Dilated Esophagus	1
Adenopathy	2
Pulmonary Cyst	1
Bronchiectasis	1

The following cardiac conditions were discovered by the roentgenologic examination and were not recognized or suspected prior to the roentgenologic report:

Rheumatic Heart Disease	3
Dextracardia	2
Enlarged heart with development of hypertension post-partum	1

All cases of known heart disease or hypertension were excluded.

These additional findings, while small in number, were of great importance to the individual patient and to us in the proper treatment of the patient during the prenatal course and following.

It is interesting to note that tuberculosis in our prenatal clinic is more common than unknown syphilis or any of the following obstetric complications and procedures: face presentation, prolonged labor, heart disease, brow presentation, version and extraction, craniotomy, hysterectomy, hysterostomy, evacuation of hematomata therapeutic abortion, placenta praevia, retained placenta, uterine inertia, contraction ring, post-partum hemorrhage, cardiovascular disease, and diabetes.

CONCLUSIONS

1. Our study indicates to us that pulmonary tuberculosis is present, unknown and asymptomatic in 2.01 per cent of our white patients and in 1.33 per cent of our negro patients or 1.44 per cent of our clinic population.

2. The disease is more common than unknown syphilis and many frequently discussed and emphasized obstetric complications and procedures.

3. To safe-guard the newborn child and to confine the spread to other contacts, roentgenologic chest examination, as a clinic routine, is necessary. It has been estimated that physical diagnosis alone gives an error of 90 per cent.

4. While tuberculosis has decreased in importance as a cause of death in the general population, it remains a much more important cause of death for young women in the child-bearing age. It was estimated in 1942 to cause 20 per cent of deaths in these women.

5. These routine roentgenologic chest examinations also brought to light unrecognized cases of other pulmonary and cardiac disease which were of great importance to the individual patients and to us in the proper treatment of these patients.

6. The total incidence of tuberculosis in the clinic, known and unknown, is 2.38 per cent for the white patient; 1.67 per cent for the negro patient, and 1.78 per cent for the total clinic.

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DEPARTMENT OF OBSTETRICS

STATISTICAL SUMMARY

July 1, 1950 through June 30, 1951

PATIENT STATUS

	LIVE BIRTHS	STILLBIRTHS	ABORTION	TOTAL
Private patients (twins 13 sets)	878	15	47	940
White-registered clinic (twins 7 sets)	419	7	0	426
White-nonregistered clinic (twins 1 set)	101	5	7	113
Colored-registered (twins 14 sets)	1459	36	9	1504
Colored-nonregistered (twins 2 sets)	143	6	36	185
Total	3000	69	99	3168

PRESENTATION: PREMATURE AND FULL TERM (DELIVERY DIAGNOSIS)

	SPON. DEL. HOME		SPON. DEL. HOSP.		OPERATION FROM BELOW		OPERATION FROM ABOVE		TOTAL	
	Wh.	Col.	Wh.	Col.	Wh.	Col.	Wh.	Col.	Wh.	Col.
Vertex			321	713	1007	841	50	35	1380	1596
Face			0	2	1	2	1	1	2	5
Brow			0	0	1	0	0	0	1	0
Breech			11	8	43	46	2	9	56	63
Transverse			0	0	4	0	1	1	5	1
Compound			1	1	2	1	0	0	3	2
Unknown			0	0	1	0	0	0	1	0
									1448	1667

ADULT DEATHS

	WH.	COL.	TOTAL
Non-maternal mortality	0	1	1
Maternal mortality	3	0	3
Registered clinic patients	1	0	1
Non-registered clinic patients	1	0	1
Private patients	1	0	1

TYPE OF DELIVERY

			SERVICE		PVT.	TOTAL	%
			Wh.	Col.			
1. Spontaneous			194	716	140	1050	33.8
2. Operative			346	943	766	2055	66.2
	LOW	MID					
A. Forceps-total	1830	15	307	841	697	1845	59.4
Indications							
Control	1471	4	250	659	566	1475	
Presentation occiput posterior	118	1	15	64	40	119	
Delivered as such	48	0	7	29	12	48	
Following forceps rotation	53	1	7	30	17	54	
Following manual rotation	17	0	1	5	11	17	
Presentation occiput transverse	160	6	27	68	71	166	
Following forceps rotation	88	3	13	48	30	91	
Following manual rotation	57	1	13	13	32	58	
As such	15	2	1	7	9	17	
Presentation face	2	0	0	1	1	2	
Labor prolonged	21	4	4	19	2	25	
Heart disease	20	0	5	10	5	20	
Cord-prolapse of	2	0	0	1	1	2	
Brow	1	0	1	0	0	1	
Compound	2	0	2	0	0	2	
Second stage, prolonged	33	0	3	19	11	33	
B. Breech extraction—total			22	54	28	104	3.4
a-Decomposed			0	0	1	1	
Head—aftercoming—forceps to			7	18	8	33	
C. Version—internal podalic and breech extraction—total			4	2	1	7	0.2
Presentation transverse			2	0	0	2	
Second twin			2	2	1	5	
D. Cesarean section—all types—total			13	46	40	99	3.2

TYPES OF DELIVERY—*Continued*

Indications	CLASS	LAPARO TRACH	EXTRA PERITO	P.M. CESAR.	CESAR. HYSTER.	SERVICE		PVT.	TOTAL	%
						Wh.	Col.			
Indications	4	93	0	2	0					
1. Pelvis contracted		20				3	9	8	20	
2. Baby—excessive size of		6				1	3	2	6	
3. Inertia, uterine		9					3	6	9	
4. Malpresentation		2						2	2	
5. Pelvis—tumor blocking		2					2		2	
6. Placenta previa Complete		7 2				1 2	1	5 2	7 2	
Incomplete		5				1	1	3	5	
7. Placenta—prema- ture separation of	1	8				2	3	4	9	
Complete	1	1					1	1	2	
Partial		7				2	2	3	7	
8. Preeclampsia		8				1	7		8	
9. Cardiac failure				1				1	1	
10. Eclampsia		2					2		2	
11. Diabetes		4					3	1	4	
12. Section previous	2	15				2	7	8	17	
A. Cont. pelvis	1	7				1	4	3	8	
B. Prem. sep.		1						1	1	
C. Toxemia	1	3				1	1	2	4	
D. Inertia		1					1		1	
E. Unknown		3					1	2	3	
13. Renal disease		2					1	1	2	
14. Primigravida elderly		1					1		1	
Prev. ligation uterine arteries		1						1	1	
Rh incompatibility		2				1	1		2	
Cancer cervix		1					1		1	
Face		1					1		1	
Tuberculosis		1						1	1	
Marg. sinus rup- ture		1				1			1	
Maternal death				1		1			1	
Other indication	1						1		1	

OTHER OPERATIONS AND PROCEDURES NOT INCLUDING DELIVERY

	SERVICE		PVT.	TOTAL	C' %
	Wh.	Col.			
1. Episiotomy—total	350	950	753	2053	1.92
a. Central	349	946	723	2018	
With rectal laceration	2	31	12	45	
b. Paramedian	1	4	30	35	
With rectal laceration	0	0	0	0	
2. Perineorrhaphy—total	33	124	52	209	
a. Indicated (laceration)	28	116	44	188	
b. Elective (old R.V.O.)	5	8	8	21	
3. Trachelorrhaphy	15	32	25	82	
4. Hysterostomy—total	0	1	2	3	
5. Hysterectomy—total	0	6	0	6	
a. Uterus couvillaire	0	1	0	1	
b. Uterus—rupture of	0	1	0	1	
c. Uterus—fibroids of	0	2	0	2	
d. For sterilization only	0	2	0	2	
6. Dilatation and curettage—total	4	23	24	51	
a. Secundines retained	4	22	24	50	
b. Not pregnant	0	1	0	1	
7. Placenta, manual removal of—total	12	15	19	46	
8. Hematoma, evacuation of	1	0	1	2	
9. Fetal scalp clamp—application of—total	7	8	2	17	
a. Placenta previa	0	1	0	1	
b. Placenta—premature separation of	5	4	2	11	
c. Inertia uterine	1	2	0	3	
d. Induction of labor	0	1	0	1	
e. Prolapse cord	1	0	0	1	
10. Amniorrhexis for induction of labor—total	6	10	6	22	
a. Preeclampsia	0	2	4	6	
b. Hypertensive disease	3	1	0	4	
c. Eclampsia	0	1	0	1	
d. Placenta—premature separation of	3	3	1	7	
e. Convenience	0	3	1	4	
11. Sterilization	13	38	10	61	
a. Section previous	2	7	5	14	
b. Multiparity (para 8 or more)	6	22	1	29	
c. Hypertensive disease	3	8	2	13	
d. Renal disease	0	0	1	1	
e. Pathology cardiac	0	1	0	1	
f. Epilepsy	1	0	0	1	
g. Other	1	0	1	2	
ACCOMPANYING SECTION	1	8	3	12	
12. Myomectomy	0	1	0	1	

OTHER OPERATIONS AND PROCEDURES NOT INCLUDING DELIVERY—Continued

	SERVICE		PVT.	TOTAL	C' %
	Wh.	Col.			
ABORTIONS—TOTAL	7	45	47	99	
Therapeutic—total	0	1	0	1	
A. Pre-eclampsia	0	1	0	1	
Spontaneous—total	7	44	47	98	
Requiring completion	5	21	24	50	

COMPLICATIONS

	SERVICE		PVT.	TOTAL	%
	Wh.	Col.			
MATERNAL					
Placental—total	37	63	52	152	
Placenta previa complete	0	0	2	2	
Placenta previa incomplete	1	4	3	8	
Placenta, premature separation of	18	29	24	71	
A. Implanted normally	15	20	20	55	
B. Implanted low	3	9	4	16	
Placenta retained	12	15	19	46	
Cord, prolapse of	6	7	4	17	
Pelvis contraction of (X-ray classification)	14	114	25	153	
Contracted inlet	6	54	8	68	
Contracted midplane	1	38	8	47	
Contracted outlet	1	3	3	7	
Contracted inlet & outlet	0	1	0	1	
Contracted inlet & midplane	0	5	0	5	
Contracted midplane & outlet	5	9	5	19	
Contracted inlet, outlet and midplane	0	4	1	5	
Asymmetrical	1	0	0	1	
X-ray pelvimetry	78	376	110	564	
Labor	56	206	112	374	
Prolonged	6	37	10	53	
Shock antepartum	0	1	0	1	
Postpartum	6	14	4	24	
Uterus—inertia of	7	32	18	57	
Rupture of	0	1	2	3	
Ring contraction	1	3	2	6	
Membranes—rupture of—premature	34	118	75	227	
Dystocia—cervical	0	0	1	1	
Hemorrhage and blood dyscrasia	143	228	214	585	
Anemia	30	68	12	110	
Sickle cell anemia	0	4	0	4	
Hemorrhage antepartum and intrapartum—	19	42	29	90	
Postpartum	16	29	20	65	
Rh negative—total	76	95	143	314	
With antibodies	6	7	10	23	
Other isoimmunization	2	0	0	2	
Cardiovascular disease	11	28	9	48	
Toxemia	67	248	46	361	11.6
Pre-eclampsia	30	129	25	184	
Eclampsia	1	8	0	9	
Hypertensive disease with toxemia	4	15	1	20	
Hypertensive disease without toxemia	24	65	12	101	
Unclassified	8	31	8	47	
Infection	49	156	97	302	
Genital tract 5.0%	25	82	48	155	
Puerperal	23	56	20	99	
Wound-perineal	2	1	5	8	
Others	0	25	23	48	

COMPLICATIONS—*Continued*

	SERVICE		PVT.	TOTAL	Per 100
	Wh.	Col.			
MATERNAL— <i>Continued</i>					
Infection— <i>Continued</i>					
Respiratory	10	23	21	54	
Other pulmonary disease	4	8	6	18	
Tuberculosis active	0	2	0	2	
Tuberculosis arrested	6	13	15	34	
Urinary tract	9	40	22	71	
Pyelitis—antepartum	4	16	11	31	
Pyelitis—postpartum	5	24	11	40	
Infection miscellaneous	2	5	3	10	
Intrapartum fever	3	6	3	12	
Hydramnios	6	10	3	19	
Diabetes	1	18	3	22	
Hyperemesis	1	7	6	14	
Shoulder dystocia	0	9	2	11	
Fibroids	0	9	0	9	
Cerebral accident	1	0	0	1	
Malignancy—generative tract	0	1	0	1	
Epilepsy	1	3	2	6	
Rectum—stricture of	1	6	1	8	
FETAL	74	123	66	263	
Injury and disease	23	33	22	78	
Hemorrhage intracranial	6	6	5	17	
Atelectasis	12	24	9	45	
Newborn-hemolytic disease of	5	3	8	16	
Infection	6	17	9	32	
Diarrhea	2	7	4	13	
Lues	0	2	0	2	
Impetigo	3	3	2	8	
Pneumonia	1	4	2	7	
Septicemia	0	1	1	2	
Development—abnormalities of	39	61	31	131	
CNS	5	1	0	6	
Heart	1	2	4	7	
GI	12	14	2	28	
Ext.	7	15	7	29	
Mouth	2	1	1	4	
Others	12	28	17	57	
Tumors	5	9	2	16	
Fractures	0	1	1	2	
Nerve injury	1	2	1	4	

STILLBIRTHS

BIRTH WEIGHT	WHITE WARD	COLORED	PRIVATE	TOTAL
400-999 gms.....	2	9	4	15
1000-1499 gms.....	2	5	6	13
1500-1999 gms.....	0	7	1	8
2000-2499 gms.....	5	6	1	12
2500 and over.....	10	15	3	28
Total.....	19	42	15	76

SUMMARY—JULY 1, 1950-JUNE 30, 1951

	TOTAL	HOSPITAL SERVICE		PRIVATE
		Wh.	Col.	
1. Number of patients discharged.....	3485	588	1838	1059
2. Number of patients delivered and discharged (twins 37 sets).....	3168	539	1689	940
A. Patients delivered of viable infants.....	3069	532	1644	893
B. Patients aborting.....	99	7	45	47
3. Maternal mortality.....	4	2	1	1
A. Rate per 1000 live births.....	1.32	3.84	0.62	1.12
4. Number of viable babies born.....	3106	540	1660	906
a. Term.....	2751	477	1437	837
b. Premature*.....	355	63	223	69
A. Number born alive.....	3030	522	1617	891
a. Term.....	2723	467	1422	834
b. Premature.....	307	55	195	57
B. Number still born.....	76	18	43	15
a. Term.....	28	10	15	3
b. Premature.....	48	8	28	12
c. Rate per 1000 viable births (over 400 gms.).....	24.4	33.2	25.9	16.5
5. Number of neonatal deaths.....	41	5	24	12
a. Term.....	10	1	7	2
b. Premature.....	31	4	17	10
c. Rate per 1000 live births (over 400 gms.)..	13.2	9.5	14.4	13.2
6. Total fetal mortality.....	117	23	67	27
a. Rate per 1000 births.....	37.6	42.7	40.3	29.7

* A premature baby is one which weighs less than 2500 gms. at birth.

TOTAL NUMBER OF VIABLE BABIES (TWINS 37 SETS)

Born Alive 3030

	HOSPITAL DELIVERY						TOTAL	
	Service				Private		L.	D.
	Wh.		Col.		L.	D.		
	L.	D.	L.	D.				
Birth weight—less than 1000 gms.*	0	0	2	6	1	4	3	10
1000 to 1499 gms.	2	1	16	5	5	4	23	10
1500 to 1999	12	1	42	5	9	0	63	6
2000 to 2499	37	2	118	1	32	2	187	5
All premature live births	51	4	178	17	47	10	276	31
Salvage							90%	
Term live births (2500 plus gms.)								
99.6%	466	1	1415	7	832	2	2713	10

* Lived for 48 hours.

PREMATURE LABOR—CAUSES OF

	HOSPITAL DELIVERY			TOTAL
	Service		Private	
	Wh.	Col.		
Induced.....	1	0	3	4
Toxemia.....	0	0	3	3
Preeclampsia.....	0	0	2	2
Hypertensive disease.....	0	0	1	1
Elective.....	1	0	0	1
Spontaneous.....	62	223	66	351
Toxemia.....	9	45	5	59
Preeclampsia.....	3	22	3	28
Eclampsia.....	0	3	0	3
Hypertensive disease with toxemia.....	5	6	2	13
Hypertensive disease without toxemia.....	0	11	0	11
Other toxemias.....	1	3	0	4
Hemorrhage.....	7	19	9	35
Placenta previa.....	1	2	1	4
Placenta—premature separation of.....	5	14	7	26
Other hemorrhages.....	1	3	1	5
Membranes—premature rupture of.....	8	33	9	50
Syphilis.....	0	0	1	1
Hydramnios.....	1	1	0	2
Pregnancy multiple.....	3	18	13	34
Disease—maternal—acute infectious.....	0	1	0	1
Pathology—cervical.....	1	0	0	1
Fetus—abnormalities of.....	5	8	1	14
Fetus—intrauterine death of.....	0	3	5	8
Cause undetermined.....	28	95	23	146

ETIOLOGY OF NEONATAL MORTALITY (STILLBIRTHS AND DEATHS IN LIVE BORN)

	PREMATURE			FULL TERM		
	HOSPITAL DELIVERY			HOSPITAL DELIVERY		
	Service		Private	Service		Private
	Wh.	Col.		Wh.	Col.	
Hemorrhage intracranial.....	3	1	5	0	2	0
Delivery vertex—traumatic.....	1	0	0	0	0	0
Delivery breech.....	2	1	5	0	2	0
Anoxemia.....	6	20	8	4	12	3
Placenta—premature separation of...	3	9	7	2	1	1
Toxemia.....	1	4	1	0	1	1
Cord—umbilical compression of.....	0	1	0	1	1	0
Intrapartum fever.....	0	0	0	0	1	0
Shoulder dystocia.....	0	0	0	0	1	0
Anesthetic shock.....	0	0	0	0	1	0
Ruptured uterus.....	0	0	0	0	1	0
Undetermined.....	3	6	0	1	5	1
Development—anomalies of.....	3	6	4	5	5	1
Infections.....	0	1	1	1	0	0
Syphilis.....	0	0	1	0	0	0
Septicemia.....	0	1	0	1	0	0
Prematurity.....	0	8	4			
Disease—hemolytic—congenital.....	0	0	0	0	0	1
Undetermined.....	0	9	0	1	3	0

MATERNAL MORBIDITY*

	HOSPITAL SERVICE				PRIVATE		TOTAL	
	Wh.	Rate	Col.	Rate	No.	Rate	No.	Rate
All causes.....	35	6.5	102	6.0	61	6.5	198	6.2
Birth canal only.....	25	4.6	82	4.8	48	5.1	155	4.9
Delivery spontaneous.....	5	2.6	20	2.8	5	3.6	30	2.9
Delivery operative below.....	18	5.4	37	4.1	25	3.4	80	4.1
Delivery operative above.....	2	15.4	25	54.4	18	45.0	45	45.0

* The criterion used for maternal morbidity is the standard of a temperature elevation to 100.4 degrees or over on any two days of the puerperium excluding the day of delivery.

MORTALITY RATE PER 1000 LIVE BIRTHS

	TOTAL	RATE	WT.	RATE	COL.	RATE
Registered clinic.....	2	1.04	1	2.35	1	0.66
Non-registered clinic.....	1	3.26	1	8.71	0	0.00
Private.....	1	1.07	1	1.07	0	0.00
Combined.....	4	1.21	3	2.03	1	0.59

Causes of adult deaths.

SUMMARIES OF MATERNAL DEATHS

* 58659

This private patient, a 41 year old, white, para 7-0-1-7, was seen in the University Hospital Accident Room several minutes after she had died en route to the hospital. She was referred by her family physician on the morning of her death, October 1, 1950. Nothing is known of her family history or past obstetric history. Six weeks before death, her family physician found her to have a blood pressure of 180 mm. of mercury systolic, and 100 mm. diastolic. Hospitalization was advised but was refused. She also refused to return for further visits until the morning of October 1, 1950 when she went to her physician complaining of substernal pain and profuse perspiration. Her blood pressure was 225 mm. of mercury systolic and 120 mm. diastolic. Heart sounds were slapping and accentuated. She was sent to the University Hospital in her husband's car and approximately five minutes before arrival, she suddenly had severe chest pain, collapsed and became very cyanotic. She was dead on arrival. She was sent to the delivery suite and arrived there about fifteen minutes after death. The fetal heart beat was present at the rate of 120 per minute. A post mortem cesarean section was done, and she was delivered of a full term, living, male child, weighing 5089 grams. The baby was resuscitated and breathed spontaneously in twenty minutes and was discharged from the hospital alive.

AUTOPSY

Anatomic Diagnosis: Cardiac hypertrophy, left ventricular, moderate; dissecting aneurysm, aorta, base and ascending arch; dissection with partial obstruction, innominate artery; rupture of aneurysm into pericardial sac; hemopericardium (400 ccs. plus); postpartum uterus; recent Caesarean section; obesity.

* 63821

This registered patient, a 32 year old, white, para 1-0-0-1, was admitted to the hospital at 11 A.M., May 9, 1951 because of vaginal bleeding of 6 hours duration at term. Her past obstetric history was non-contributory. During the first 6 months of this pregnancy there was some vaginal spotting. In the 6 hours prior to admission, she had bled sufficiently to soak 2 pads. There had been no pain. A physical examination revealed a blood pressure of 95 mm. of mercury systolic and 65 mm. diastolic, the uterus was not tender or rigid; hematocrit 34 c. mm., hemoglobin 77%. The fetal heart beat was present. Placentography showed the placenta to be lowly implanted. After admission the bleeding ceased and her blood pressure became normal. On May 11, 1951 a pelvic examination revealed the cervix to be soft, 2 cm. dilated, 40% effaced, no placental tissue was felt, so the membranes were stripped. This was at 11 A.M., May 11, 1951. At 11:30 A.M. she was given 1 ounce of castor oil followed by a soap suds enema. Labor did not start. At 5 P.M. the patient was checked and found to be comfortable. At 5:15 P.M. she called the nurse who found her holding her chest and crying. An immediate examination showed respiratory difficulty, rapid and thready pulse but normal breath sounds throughout. Oxygen was ordered and the assistant resident who arrived within 2 or 3 minutes found the patient to be cyanotic, foaming at the mouth with Cheyne-Stokes respirations. Her pulse was almost unobtainable and the patient became increasingly cyanotic in spite of oxygen. The pharynx and larynx were explored digitally and no

obstruction felt. At 5:25 P.M. her respirations ceased and heart sounds could not be heard. The fetal heart beat was still present. A full term living female child was delivered, weighing 3572 grams at 5:27 P.M. by post mortem Caesarean section. The baby was resuscitated. It showed evidence of mild intracranial hemorrhage, but was discharged in good condition.

A post mortem examination revealed only one abnormality, and this was not felt to be of any importance. This abnormality was a mild aortic and mitral valvulitis. Nothing unusual was found in the lungs or brain. Cause of death: unknown.

§ 17504

This registered patient, a 35 year old, colored, STS positive, Rh positive, para 5-1-0-2, was admitted to the hospital June 15, 1951 because of malaise, vertigo and abdominal discomfort. Her estimated date of confinement was November 11, 1951. The past obstetric history revealed that all previous pregnancies were complicated by hypertension. She had made 2 visits to the dispensary with this pregnancy, both blood pressures being normal.

On admission the patient's temperature was 101 F. and pulse 100. The heart had a gallop rhythm with an occasional dropped beat and a systolic murmur at the apex. There was evidence of cardiac enlargement. Her blood pressure was 140 mm. of mercury systolic and 80 mm. diastolic. The lungs were clear. The liver was 3 fingers breadth below the costal margin. The spleen was palpable, and there was bilateral lower abdominal tenderness. There was also bilateral costo-vertebral angle tenderness. She was thought to be 16 weeks pregnant. On June 16, 1951 electrocardiography was normal. The chest roentgenograph on June 18, 1951 showed a cardiac enlargement with rheumatic configuration and bilateral pulmonary congestion. Her hemoglobin was 6.9 grams and 29% of the red blood cells showed sickling. A serum test for syphilis was positive with a reagin titer of 8. There was 2 to 4 plus albuminuria with pyuria on daily specimens. Many other chemistries were negative. She was given a total of 3000 cc. of whole blood over a period of 10 days. Her temperature was septic in type with the highest reading being 102.6 F. She was placed on chloromycetin. An eye ground examination revealed severe retinopathy with some characteristics consistent with arterial hypertension while the pre-retinal hemorrhages resembled the type most often seen in blood dyscrasias and severe anemias. Her blood pressure ranged from 120 to 160 mm. of mercury systolic and 80 to 110 mm. diastolic. The general impression was that she had chronic pyelonephritis, hypertensive syndrome, sickle cell anemia, and possible perinephritic abscess on the right. On June 23, 1951 the patient had a convulsion and her blood pressure rose abruptly to 240 mm. of mercury systolic and 140 mm. of mercury diastolic. Following the convulsion some 12 hours later her blood pressure dropped as low as 126 mm. of mercury systolic and 90 mm. diastolic. The impression was that she had a hypertension encephalopathy. There was evidence of some pulmonary obstruction on June 24, 1951, and on bronchoscopy about 2 ounces of purulent material was obtained, following which her lung fields were clearer. A repeat chest roentgen examination on the same day revealed a pneumonitis of the right upper lobe and a partial atelectasis of the right middle lobe. One medical consultant felt she may have widespread vascular disease such as periarteritis nodosa or lupus erythematosus in addition to myocardial damage. Her condition steadily deteriorated and respirations ceased on June 30, 1951. An autopsy was not obtained. Below follows the expected cause of death and complications thereof:

1. Disseminated vascular disease.
2. Hypertensive cardiovascular disease with encephalopathy.
3. Sickle cell anemia.
4. Pyelonephritis.
5. Pneumonitis.
6. Partial atelectasis.

§ 14928

This patient is a 30 year old, white unregistered, para 7-0-0-3 who was admitted to the hospital at 12:30 A.M. April 17, 1951 via ambulance in a delirious, but conscious state. Her pulse rate was 70, blood pressure normal, respirations difficult to count because the patient moaned and groaned.

The past history revealed that at age of 14 the patient had diabetes insipidus in association with

xanthomatosis, for which she received roentgen therapy. Thereafter she was lost tract of. The past obstetric history is unknown.

At noon of the day before admission the patient appeared normal to her husband except for complaining of being unable to walk. At 3:30 P.M. her son came home from school and found his mother sleeping and snoring loudly. At 6 P.M., when the husband returned home, he found her moaning and groaning. She was incoherent, and she had apparently voided involuntarily in bed. He called the hospital and an ambulance was sent out.

On admission there were the following positive findings. She was thrashing about in bed moaning and groaning with intermittent episodes of vomiting of dark brown material. Her uterus was 4 fingers breadth above the umbilicus. The fetal heart was not heard. Her reflexes were hyperactive throughout with a suggestive Babinski bilaterally. The patient was voiding involuntarily.

At 1:35 A.M. 3 grains of sodium luminal was given intramuscularly, and this was repeated at 2:15 A.M. since she was still as disturbed. A neurologic consultation was called and at 3:15 A.M. a lumbar puncture was started. The lumbar pressure was as low as 260 mm. of water and the fluid was clear. While collecting the fluid the respirations suddenly stopped and all efforts at reinstating the respirations were to no avail. She was pronounced dead at 3:30 A.M.

The spinal fluid had a negative pandy and essentially no cellular elements.

Autopsy by the medical examiner disclosed a fatty and mildly hemorrhagic necrosis of the liver, the etiology of which was unknown.

CLINICO-PATHOLOGIC CONFERENCE

FROM THE CASE HISTORIES, UNIVERSITY HOSPITAL, BALTIMORE

Clinical History

A 31 year old white female was admitted to the University Hospital as a transfer from another hospital following a convulsive seizure at 5 A.M., September 1, 1950.

Her husband said that his wife was entirely well until about one and one-half years previously when she complained of headaches. The headaches, becoming progressively more severe, caused the patient to see her local physician who advised dental care. A short time later, the patient was given glasses for myopia. Neither relieved the headache. It was noted by the husband that on several occasions, especially upon arising in the morning, she complained that her left arm and leg felt numb and cold. There was no history of weakness or ataxia.

On August 24, 1950 the patient was delivered of a full term normal child. No complications were noted. On the 31st of August she noticed numbness of the left side of the body. At 5 A.M. on September 1st she had a grand mal seizure which was followed by a left hemiparesis. She was then admitted to the Laurel, (Maryland) Hospital where a lumbar puncture was performed. This revealed a spinal fluid pressure of 180 mm. of water and contained 160 leucocytes per cubic millimeter, of which 72 per cent were lymphocytes, and 28 per cent polymorphonuclears. The Pandy test for globulin was positive.

The past history was said to be negative and the family history was non-contributory.

Physical Examination. The patient was well developed, well nourished, young white female lying in bed in an unconscious state. The skin was of normal texture and there was no cyanosis or jaundice. The rectal temperature was 99 F. The pulse and respiratory rates were 82 and 20 per minute. The systolic blood pressure was 120 mm. of mercury and the diastolic, 70 mm. of mercury. An examination of the head revealed no abnormalities or evidence of trauma. The ears and nose were negative. The pupils were round, regular and equal and reacted sluggishly to light. Dissociated eye movements were prominent. The fundi showed venous engorgement and pallor of the discs. The trachea was in the midline. The thyroid was not palpable. There was no nuchal rigidity. The breasts contained no palpable masses. The lungs were clear to percussion and auscultation, and both bases descended normally. The heart was of normal size to percussion. There was a regular rhythm. Murmurs were not heard. The abdomen was flat. There were no palpable viscera, spasm, tenderness or masses.

A neurologic examination revealed a facial palsy on the left. The left arm when dropped fell faster than the right. All deep reflexes on the left side of the body were exaggerated. Sustained ankle clonus was observed on the left. The Babinski sign was negative.

Studies of the blood determined the hemoglobin concentration to be 61 per centum: volume of packed erythrocytes, 27 mm.; erythrocyte count, 3,370,000; and leucocyte count, 14,900 per cubic millimeter. Ninety-three per cent of the leucocytes were

polymorphonuclear granulocytes and 7 per cent, lymphocytes. The thrombocytes were judged to be normal in the smear. The blood urea nitrogen concentration was 19 mg. per hundred cubic centimeters of blood and glucose, 98 mg. per hundred cubic centimeters of blood.

The patient died on September 3, 1950.

Clinical Discussion

Dr. Henry J. Marriott: This is a fairly straight-forward story, and one diagnosis immediately comes to mind but there is need for broader discussion when one has a patient aged 31 who develops a sudden convulsion with hemiplegia. The problem of hemiplegia in young adults is an interesting one. In a recent survey of about 35 male cases ranging from 20 to 40 years of age, the top score was gained by cerebral tumor but next on the list was multiple sclerosis. Multiple sclerosis can present itself as a hemiplegia and occasionally with a convulsion. In this case, multiple sclerosis is obviously excluded by the catastrophic course as she died within two days. Jacksonian fits probably would not appear in multiple sclerosis. This catastrophe happened nine days after she was delivered of a child. One wonders therefore if there was something that complicated her pregnancy. Post partum eclampsia comes to mind, but eclampsia fits usually occur within the first twenty-four hours after delivery. There is one other thing which you might think of, and that is thrombophlebitis. Now, one can get thrombophlebitis which affects the veins in the rolandic area to produce convulsions and hemiplegia following childbirth just as one can get thrombophlebitis in the other veins down in the pelvis. It usually follows infection in the tonsils, nasopharynx, or ear. The infection spreads into the lateral sinus and leads to thrombosis in the cerebral cortex. Because this is a fairly benign process, most patients recover. Ideopathic epilepsy can be followed by transient paralysis, but there again it does not kill the patient within twenty-four hours. In addition, epilepsy is unusual at this patient's age. Apoplexy, too, is uncommon in this age group. Even so, there are a number of things which do cause rupture of blood vessels at this age. The obvious one is congenital aneurysm. This would not produce symptoms referable to the cerebral cortex. One could have a mycotic aneurysm which might rupture and produce a malady like the one this patient had. Rarely, infections such as encephalitis and infectious hepatitis are complicated to produce symptoms as were seen in this patient, but she obviously did not have encephalitis or hepatitis. Cerebral embolism must be thought of in a young person, but the causes of that in a young person are rheumatic heart disease or subacute bacterial endocarditis. She had no signs of either. The most common cause of cerebral thrombosis in persons under the age of 35 is syphilis. I do not know whether or not she had syphilis. There is no STS recorded. For the moment I think we have to consider syphilis because it can cause hemiplegia and convulsions. In the early stage of meningoencephalitis one may see convulsions and hemiplegia. This could be true of also gumma and paresis. Acute infections, such as meningitis and encephalitis can cause convulsions and paralysis, but this patient obviously did not have such a disease. Trauma also could cause both these findings in a young person. There was no history of trauma, so we needn't consider that. Acute glomerular nephritis with uremia might cause this

condition but the blood urea was normal in this case. Hypertension, hypoglycemia, and carotid sinus hypersensitivity if considered as causes of this patient's malady are laid aside because of the lack of cardinal evidence. Of the space filling lesions, we name true neoplasms, abscesses, gummas, and parasitic cysts. An abscess is quite out of the question here, I believe, because abscesses of the brain are always secondary to various obvious foci, either in the skull or in the lung. The parasitic cysts are extremely uncommon. Gumma, I don't believe, would ever lead to this patient's catastrophic finish. I don't think that gummas produce sudden hemorrhages, which, I believe, was the final cause of death in this patient's case. The same applies to tuberculoma. She would have appeared more sick with tuberculoma, she would have had low grade fever, and it would not have culminated so rapidly. I think that this patient was killed by hemorrhage into a neoplasm of the right parietal lobe. Medulloblastomas usually occur in childhood. Metastatic carcinoma is often associated with cachexia or symptoms of disease in the organ affected with the primary tumor. Meningioma is slow growing and erosive to the skull. Oligodendrogliomas frequently show calcification. Glioblastomas are rapidly growing and cause death in several months. The characteristics presented in this case were contrary to the above features. I conclude, therefore, that she had an astrocytoma of the right parietal lobe and terminal hemorrhage. An astrocytoma is a more benign tumor. It usually runs a course of years and is very liable to develop cysts, into which a hemorrhage might occur.

Pathologic Summary

Examination of the body of this young white female showed no external evidence of trauma or debilitating disease. The scalp and skull were quite normal throughout, and upon removal of the dura, there was found an accumulation of cerebrospinal fluid over the parieto-occipital areas. The convolutions of the right frontal, parietal and temporal lobes were flattened, and the sulci were correspondingly shallow. Extending from the beginning of the lateral fissure, a dark reddish-black clot was found covering most of the right frontal lobe, extending over the anterior portion of the right parietal lobe. This was beneath the arachnoid. There was considerable vascular prominence throughout the right parietal lobe, which appeared slightly displaced toward the left. Anastomotic veins of Labbé were present and palpation suggested the presence of thrombi within them. Antemortem clots were found in the superior, left transverse and sigmoid sinuses. The base of the brain and the hypophysis were normal.

After fixation, coronal sectioning of the cerebrum revealed numerous areas of brownish-red hemorrhagic discoloration, seen principally in the parasagittal regions, averaging from 2.5 to 4 cm. in size. These areas of hemorrhagic discoloration were quite soft and extended from the frontal through the posterior parietal areas, involving principally the superficial and medial aspects of both hemispheres. The ventricular system was compressed throughout. Superficial cortical veins were very prominent and were filled with clotted blood. Careful examination of all the arteries showed no evidence of aneurysm.

Microscopic studies confirmed the occlusion of numerous superficial cortical veins

including bilateral anastomotic veins of Labbé. Acute passive congestion of the cortex was seen, with innumerable fresh interstitial hemorrhages associated with grossly dilated veins, the walls of which were hardly distinguishable, and which in many instances had apparently become necrotic, with subsequent rupture. Inflammatory changes were not present. No abnormality of the blood, per se, was noted. Very little reactive change in the cortex was present, suggesting a very recent process. The hypophysis was enlarged and on microscopic examination showed diffuse hyperplasia. Final diagnosis therefore, is:

Hyperplasia, hypophysis; thrombosis, superior sagittal sinus, superficial cortical veins, and anastomotic veins of Labbé; passive congestion, acute, frontal, parietal and occipital lobes; hemorrhage, intracerebral, frontal, parietal and occipital lobes, diffuse, confluent; hemorrhage, subarachnoid, diffuse, secondary.

Discussion

Dr. John A. Hagner: The clinico-pathologic correlation in this case is easily understood. After any operative procedure, trauma, or hemorrhage, and usually within a five-day period, there always occurs an increased clotting tendency which is the physiologic response, inevitably a part of the process of repair. While this process might be considered beneficial, it occasionally becomes excessive and produces the syndrome of phlebothrombosis, which is always a foremost problem to the surgeon as the patient continues within the postoperative period.

Since the birth of a child to the mother is unquestionably, to a greater or lesser extent, a manifestation of trauma, and since there is always present a healing process in the uterus at the placental site, there is a natural tendency for the clotting rate of the blood to increase after delivery. In the presence of extreme hyperemia of the pelvic veins and also associated with the general relaxation of all structures in the pelvis and lower extremities (edema, varicosities, etc.) due to both mechanical pressure of the pregnant uterus as well as physiologic hyperemia, there is a natural tendency for pooling of blood in the large veins. In the parturient woman, there is always a distinct hazard of spontaneous phlebothrombosis (milk leg). While this is sometimes associated with infection, it need not be.

The process of clotting, which in the case under discussion apparently began in the superior longitudinal sinus, is presumably upon an identical background, the process being that of a sterile (bland) phlebothrombosis, the secondary effects and the hemorrhages in the cortex being the result of propagation. An attempt at collateral drainage by way of the anastomotic veins of Labbé was attempted; however, these veins, too, became occluded. Thus venous drainage from the superficial cortical areas was completely blocked. The arterial system, being patent, continued to pour fresh blood into the cortex. The capillaries then became engorged, and, following this acute passive hyperemia, as a result of venous occlusion, an intense, stagnant anoxia developed, with secondary necrosis of capillaries and veins and with ensuing intracortical hemorrhage, and with eventual vascular rupture.

The venous blood from the parietal, frontal, and occipital cortex down to the lateral fissure drains into the superior longitudinal sinus. Drainage from the insula, temporal lobes, and the inferior surface of the frontal lobes goes by way of the deep

cerebral circulation which follows the *circus arteriosus*. Two additional venous systems are also found. These include the choroid veins and the paraventricular veins which drain principally the basal ganglia. The deep cerebral, paraventricular and choroid veins merge to form the great cerebral vein which becomes part of the straight sinus; thus all of the venous blood eventually finds its way into the transverse sinuses. It is easy, therefore, to say that the syndrome of venous occlusion in the cerebrum can be very sharply defined as a single venous system is involved, or may be rapidly fatal if, say, a thrombus occurs at the confluence of sinuses.

Spontaneous clotting in the cerebral circulation might be represented by the following table:

INTRACEREBRAL CLOTTING

(Spontaneous Phlebothrombosis)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A. <i>Trauma</i> with release of thrombokinase—increased formation of fibrinogen—clotting. <ul style="list-style-type: none">a. Following surgeryb. Traumac. Interstitial hemorrhaged. Post-partum | C. <i>Intravascular lesions</i> <ul style="list-style-type: none">a. Embolib. Sicklemiac. Collagen diseases<ul style="list-style-type: none">(a) Polyarteritis(b) Lupus erythematosusd. Infarction (heart)e. Adjacent infection |
| B. <i>Chemical</i> <ul style="list-style-type: none">a. Hypervitaminosis Kb. Snake venomc. Endogenous toxins—bacterial | D. <i>Stagnant anoxia</i> <ul style="list-style-type: none">a. Shockb. Heart failurec. Acute passive congestiond. Polycythemia (vera and relative) |

OBSTETRICAL CASE REPORT

A 24 year old primigravida first sought medical care because of vaginal bleeding and pains complicating an early pregnancy. She was immediately hospitalized and treatment was instituted. There was a history of involuntary sterility for her marital life of 3 years. Her family and past histories were negative. At the time of admission she was approximately 8 weeks pregnant and was thought to have an inevitable abortion. She was greatly distressed at the prospect of aborting. The remainder of her initial examination was negative. Interference of any kind was denied. Some 35 hours after admission she aborted spontaneously and completely. Her entire hospital stay was afebrile and she had a perfectly normal post-abortion course, being discharged on the 6th hospital day.

Question: What should be the further conduct of this case?

Discussion: The primary reason for presenting such an apparently uninteresting case is to emphasize the need for further study, in which all of the known and possible factors causing abortion should be included. These patients are all too frequently neglected and are told that many women have one or more spontaneous abortions in the course of their child-bearing career and that the only thing to do is to try again and to hope for better "luck" next time. A very common practice which cannot be condemned too strongly is to tell the patient that the abortion was on the basis of a gross fetal abnormality and that nothing could have been done to prevent it. While the first part of this statement often is correct, the remainder is probably incorrect, and in any case should not have been told the patient for she and her husband are most likely to jump to the conclusion that they are never going to be able to produce normal offspring. The result is years of unmeasurable mental disturbance or the disruption of an otherwise happy marriage.

Would it not be much kinder to say to the patient that abortions result from a large number of causes, many of which can be discovered and remedied? While it would be unfair to both the patient and the physician to guarantee success, it is certainly true that today study and indicated treatment is often followed by most gratifying results. For example, upon investigation, it is not at all unusual to find a low basal metabolic rate in one or both parties without any other signs or symptoms of thyroid deficiency. When this is the case, adequate thyroid medication is followed by successful pregnancy in such a large percentage that coincidence does not seem likely. Every patient who has had a so called "spontaneous" abortion and who places herself in the hands of a physician deserves the benefit of all the skill and knowledge he possesses. The case is far from closed when she has recovered physically.

In this presentation it is not possible to enter into a detailed description of the study employed. It should be thorough and should include the husband as well as the wife. The study should not be terminated with the finding of any one abnormality but should be carried through to conclusion.

MEDICAL SCHOOL SECTION

DR. GEAR TO LECTURE AT SCHOOL OF MEDICINE

Dr. J. H. S. Gear, Deputy Director of the South African Institute for Medical Research at Johannesburg, has accepted the invitation of the Department of Medicine to give two lectures at the School of Medicine on April 30 and May 1, 1952 under the auspices of the Sudie Thompson Memorial Fund. Dr. Gear is widely known for his important contributions in the field of Immunology. The title of his lectures at the School of Medicine, University of Maryland, will be announced later.

LEONARD M. HUMMEL AWARD ANNOUNCED



THE LEONARD M. HUMMEL MEMORIAL AWARD

As a continuing memorial to the late Dr. Leonard M. Hummel, class of 1934, an annual award has been established by his family and will be offered by the School of Medicine to the graduate in medicine selected by the Advisory Board of the Faculty for proficiency in internal medicine.

Before his untimely death Dr. Hummel practiced medicine in Baltimore. Following his graduation from the School of Medicine he interned at the West Baltimore General Hospital (now Lutheran Hospital of Maryland).

The award, a gold medal, is of modern design and displays the memorial legend on a circular relief at the margin. Within the circle are a number of relief figures—the serpent and the staff of Esculapius, a modern microscope and a directional tower symbolizing progress in an electronic age. The recipient's name, together with the date of the award will be engraved upon a ribbon tracery which runs across the face of the medal. The reverse side of the medal shows a relief of the old medical building together with several important historic dates.

MEDICAL LIBRARY NOTES

The following alumni and other friends were donors to the library between August 1 and October 1, 1951:

Dr. William A. Andersen	Dr. Arthur M. Kraut
Dr. Charles P. Barnett	Dr. Maurice C. Pincoffs
Mrs. Ruth Lee Briscoe	Mrs. Henry Russell
Mr. Andrew T. Cavacos	Dr. John E. Savage
Mr. Leonard H. Flax	Dr. Emil G. Schmidt
Dr. Frank W. Hachtel	Dr. Eduard Uhlenhuth
Dr. S. H. Hartwell	Dr. H. Boyd Wylie

Mrs. Ida Robinson, librarian of the School of Medicine, and Miss Christiana Bond of the Physiology Department spent a month in Europe during the summer. In visiting various medical centers in the British Isles they saw such famous and interesting libraries as the Royal College of Surgeons, the British Medical Association, Wellcome Historical Medical Museum, besides various national libraries which include medical collections.

In Berne, Switzerland, the librarian of the Stadtbibliothek gave the visitors access to the vaults containing the thousand or more manuscripts of Albrecht von Haller—his personal medical notes which provided the material for his extensive publications in medical bibliography, physiology, and other branches of medicine. These original manuscripts are bound in 50 volumes, all in excellent condition. The librarian of the School of Medicine obtained photostats of a few chosen pages in the personal script of this man who may be considered the founder of medical bibliography. Some of Haller's works are included in the Crawford Collection, the group of books which were the beginning of our present medical library.

Mrs. Ruth Lee Briscoe, Librarian Emeritus of the School of Medicine, recently presented the library with three framed documents of interest: a letter which she received from Sir William Osler; a letter from the Vatican written to her when Pius XI became Pope (he had formerly been librarian of the Vatican); and one copy of the letter which gave Mrs. Briscoe the title of Librarian Emeritus. These letters were appropriately hung on either side of Mrs. Briscoe's photograph in the Maryland Room, which contains all material significant in the history of the School of Medicine. A suitable ceremony took place, with the librarian explaining Mrs. Briscoe's desire to have these papers become a permanent part of the library collection. Each letter was hung by a different member of the library staff, chosen from those who had been on the staff before Mrs. Briscoe's retirement. The Director of Libraries, Mr. Howard Rovelstad, was present to acknowledge the gift.

DEPARTMENT OF ANATOMY

*Rare Book Collection Grows**I. Departmental Library:*

For many years the department has been busy building a collection of "classics of the anatomic literature". Many valuable and rare volumes have been purchased

from the department budget but lately we have taken quite a stride forward through the generosity of some of our alumni who have made gifts of precious anatomic books to the departmental library. Among the doctors the following should be especially mentioned: Doctors Albert E. Goldstein, Nathan Snyder, DeVoe K. Meade, Joseph Sindler, Benjamin Pines, Frederick P. Shepherd, and Lewis Goldstrom.

A number of medical students have been instrumental in locating anatomic works which are either rare or difficult to obtain. Among the donors are Doctors Fowler F. White, Beverly R. Birely and Messrs. Leonard H. Flax and Norman Lavy. Because of Dr. White's alertness the collection includes a copy of Leeuwenhoek's *The Physiological Letters* (1719), and to Mr. Flax's courtesy a copy of Langley's *The Autonomic Nervous System* (1921), a book for which we hunted for nearly twenty years without success. Through the generosity of Dr. Albert E. Goldstein a special book fund has been created for which Dr. Goldstein pledged contributions totaling a sum of \$2,000. From this fund 35 volumes have already been purchased. Among these are such rare works as Malpighi's *Opera Omnia* (1687), Casserius's *On the Anatomy of the Organs of Voice and Hearing* (1600), Cowper's splendid folio volume *An Anatomical Treatise on the Muscles of the Human Body* (1724), Highmore's *Anatomical Text* (1651), Hunter's *A Treatise on the Blood* (1794), Steno's *Essay on the Muscle* (1667), Caspar Friederich Wolff's *Theoria Generationis* (1759) and many other rare and precious books.

Dr. Nathan Snyder donated to the department the famous and extremely rare book by Berengarius *Isagogae Breves* (1523).

Dr. DeVoe K. Meade of Takoma Park, Maryland, presented the department with a copy of Braune's *Topographical Atlas* (1888), a folio work which contains numerous colored life size plates of sections through the human body, especially valuable because of sagittal sections through pregnant females at different stages of pregnancy.

Inasmuch as many members of preclinical as well as clinical departments have been using this valuable collection, not only the Department of Anatomy but the School of Medicine owes to these generous donors an expression of gratitude. At the same time it is hoped that others will emulate their example.

II. Comparative Osteologic Collection:

Because of lack of proper connections, the comparative osteologic collection has developed very slowly. Recently, however, we have been so fortunate to find in Mr. Arthur R. Watson, Director of the Baltimore Zoo, a friend who has helped greatly in building up this collection. Mr. Carl W. Mueller, is creating a collection of beautifully white and shiny skeletons. So far this comparative osteologic collection has been used only by the members of the department in preparing themselves for lectures to the students, but sooner or later someone will become interested in a research problem for which a collection of this kind is needed. We are greatly indebted to Mr. Watson for his cooperation in developing an aspect of anatomy which must be cultivated in an anatomic department.

DEPARTMENT OF OBSTETRICS

Dr. John E. Savage was recently elected to membership in The American Association of Obstetricians, Gynecologists and Abdominal Surgeons. Dr. Savage has also been appointed Vice-Chairman of the 4th District of the American Academy of Obstetrics and Gynecology.

Dr. D. Frank Kaltreider will read one of the main papers at the coming American Congress on Obstetrics and Gynecology, to be held in Cincinnati, Ohio in March, 1952. His paper will concern contracted pelves.

Dr. Hugh B. McNally presented a paper on "Vaginal Hematomata" before the Section on Obstetrics of The Southern Medical Association at its annual meeting in November, 1951.

Dr. J. Morris Reese has recently been elected a Councilor of The Southern Medical Association.

Dr. George H. Davis will read a paper at the annual meeting of The A. M. A. at Chicago in June, 1952. His subject is maternal mortality in Baltimore over a 15 year period.

Dr. Louis H. Douglass was recently elected Vice-President of The American Academy of Obstetrics and Gynecology. This is a new national organization which is expected to quickly reach a total of about 5,000 members. Dr. Douglass was also recently elected Chairman of the Section on Obstetrics and Gynecology of the A.M.A.

MERCY HOSPITAL

VISITING STAFF

At the October Staff meeting, Dr. Harry McB. Beck was elected President of the Visiting Staff. Other new officers for 1951-52 are Dr. Sol Smith, Vice-President and Dr. Joseph V. Jerardi, Secretary.

Recently appointed to Mercy's Visiting Staff are Dr. David Josephs, Dr. Vincent dePaul Fitzpatrick, Dr. F. X. Paul Tinker, Dr. John M. Rehberger, Dr. John C. Brickner, III, Dr. Harry P. Porter, and Dr. Thaddeus C. Siwinski.

Dr. Charles E. Brambel, Chief of the Biochemistry Department attended the American Chemical Society Diamond Jubilee, held in New York City, September 3-7th, 1951.

Dr. William L. Garlick, Chief of Thoracic Surgery Department has initiated a weekly Chest Disease Conference for medical students, house officers and visiting staff. These conferences are held in Room 33 on Thursdays, from 4-5 P.M. Attending these meetings is usually a well-balanced team of doctors, including the radiologist and internist who judge the problems at hand along with the surgeons presenting the cases.

Dr. Henry J. L. Marriott, Assistant Professor of Medicine and Assistant Physician

on the Mercy Staff, is the author of a new book, "Medical Milestones", just released by the Williams & Wilkins Company of Baltimore. The book is written principally for the lay public and gives a factual account of major developments in medicine since 1940.

Dr. Charles E. Brambel and Dr. William L. Garlick are collaborating on a research project recently initiated through a Government contract. The main subject of study being done is the field of clotting mechanisms. Several additional projects are also under way.

RESIDENT STAFF

A recent addition to the Resident Staff is Dr. Mier Bizer of Jeffersonville, Indiana, as Senior Assistant Resident Surgeon. Dr. Bizer is a graduate of the University of Louisville, and interned at St. Elizabeth's Hospital, Lafayette, Indiana. Prior to his appointment at Mercy, he was in private practice for about 10 years.

Dr. Pomeroy Nichols, Jr., Junior Assistant Resident in Neurosurgery, presented an exhibit on "Cerebral Phlebothrombosis" at the meeting of the New York Academy of Medicine, the week of October 15, 1951.

Dr. Sim Penton, Resident in Thoracic Surgery at Mercy, City and University Hospitals, delivered a paper entitled "A Viable Pedicle Graft for Repairing an Intrathoracic Structure", at the December meeting of the Southern Surgical Association.

ARMED FORCES SECTION

Dr. Elden Pertz, Resident Surgeon at Mercy from July, 1950 to June 30, 1951, is now 1st Lt. in the USAF, 375th Medical Group, stationed at Donaldson Air Force Base Hospital, Greenville, S.C.

Dr. Frank J. Theuerkauf, Jr., Junior Assistant in Surgery from July, 1950 to January 16, 1951, is at present attached to the 3rd Field Hospital in Pusan.

Dr. Thaddeus C. Siwinski, recently appointed to Mercy's Visiting Staff, was called to service on November 9, 1951, and is stationed at Kelly Air Force Base, San Antonio, Texas.

DOUGTRICIANS

The third annual meeting of the Dougtricians was held at the University Hospital on June 6, 1951. This organization is composed of the former residents in obstetrics at the University Hospital and Baltimore City Hospitals who have served under Dr. Louis H. Douglass. Twenty-seven obstetricians from various parts of the country attended. The scientific program was as follows:

Treatment of vulva hematomas—**Dr. H. B. McNally**

Abdominal and lumbar infiltration for relief of pain during labor—**Dr. D. M. Dixon**

Effects of the scalp clamp as recorded by the TKD machine in normal labor, induction of labor and uterine inertia—**Dr. C. R. A. Gilbert**

Clinical and x-ray pelvimetry, experiences and analysis of 1160 films—**Dr. D. F. Kaltreider**

Use of intravenous pitocin drip in induction of labor, incomplete abortion, uterine inertia, postpartum hemorrhage and following cesarean section—**Dr. J. E. Savage**

The passing of the uterine pack and the treatment of postpartum hemorrhage—**Dr. L. H. Douglass.**

A luncheon was served in the nurses' dining room of the University Hospital and the meeting culminated in a dinner at the Southern Hotel. Dr. Reuben Stinemeyer, Professor of Politics and Government at the University of Maryland, College Park, Maryland, was the guest speaker. Dr. J. Morris Reese, President, presided.

RECENT GRANTS

Research grants in aid awarded to the School of Medicine during the past year have aggregated somewhat over \$204,000.

Some of these grants include \$10,763 from the National Cancer Institute to Dr. Frank H. J. Figge for cancer research.

A United States Public Health Service grant for \$10,000 has been awarded to the Department of Bacteriology for continued investigation on animal polysaccharides.

From the National Research Council, Dr. Robert Grenell of the Department of Psychiatry has received \$6,000 for studies relating to alcohol.

DEPARTMENT OF BIOCHEMISTRY

During the year numerous grants in aid for research have been received by Drs. Emil G. Schmidt, Professor of Biochemistry, E. J. Herbst and R. E. Vanderlinde. These grants include \$2,000 from the Nutrition Foundation for studies concerning chemotherapeutic substances and the efficiency of food utilization.

A National Institute of Health grant for \$3,240 has been made for studies concerning microbiologic determination of aromatic aids in urine.

The Williams, Waterman Foundation Research Corporation has granted \$1,800 for investigation into putrescine metabolism.

The department has received a grant of \$3,000 from the Bressler Research Fund for microbiologic studies with *Cryptococcus neoformans* and *P. influenza*.

DEPARTMENT OF PATHOLOGY

The department announces the appointment of Dr. Robert C. Rodger, United States Public Health Service, as Assistant in Pathology. Dr. Rodger, a graduate of Harvard Medical School, completed his Residency in Pathology under Dr. C. H. Binford at the United States Marine Hospital, Baltimore in 1950. He has returned to active duty as Associate Pathologist at the Marine Hospital, Baltimore after a year at the Armed Forces Institute of Pathology in Washington, D. C.

Dr. Roy B. Turner, class of 1944, has recently been appointed to the staff of the Department of Pathology where he will continue his training in this field. After his graduation from the School of Medicine, he served his rotating internship at Mercy Hospital, Baltimore, after which he joined the Armed Forces serving in Germany. After a period of residency in General Surgery at the Lutheran Hospital in Baltimore, Dr. Turner again served in the United States Army, being separated in December,

1950. During the past year he has been a member of the resident staff in Neurosurgery at the School of Medicine.

Dr. Ruth W. Baldwin, class of 1943, a member of the staff of the Department of Pediatrics and Director of the Seizure Clinic at the School of Medicine, has recently become associated with the division of Neuropathology.

Dr. Charles P. Barnett, class of 1941, until recently a member of the staff of the Department of Pathology, has become associated with the Department of Clinical Pathology under Dr. Milton S. Sacks.

Dr. James H. Ramsey has been recently appointed a member of the Department of Pathology. A graduate of Pennsylvania State College, he received his degree of Doctor of Medicine from Temple University School of Medicine in 1937. After an internship at the Harrisburg General Hospital, he entered the practice of general medicine at Aberdeen, Maryland. From 1942 through 1946 he served with the United States Air Force, returning to Aberdeen where he continued to practice up to the time of his appointment at the School of Medicine.

Dr. Gerardo B. Polanco has recently been appointed a member of the Department of Pathology. Dr. Polanco, a graduate of the University of Puerto Rico, received his degree of Doctor of Medicine from the Temple University School of Medicine in 1950, serving his internship at Bayamon District Hospital, Bayamon, Puerto Rico. He is a member of the Phi Chi Medical Fraternity.

DEPARTMENT OF SURGERY

Dr. R. Adams Cowley, class of 1944, has been appointed to the Faculty of the School of Medicine as Assistant in Thoracic Surgery and Assistant Director of Surgical Research, replacing Dr. William D. Lynn who resigned to enter private practice.

Dr. Cowley, who served his internship and assistant residency in surgery at the University Hospital, has recently served a two year residency in thoracic surgery at the University of Michigan School of Medicine under the preceptorship of Dr. John Alexander. Dr. Cowley will assist Dr. George H. Yeager in promoting surgical research at the School of Medicine and in addition, will supervise the newly organized Cardiac Research Center at the Baltimore City Hospitals.

DEPARTMENT OF PHARMACOLOGY

DR. C. JELLEFF CARR RECEIVES ACADEMIC RANK OF PROFESSOR

Dr. C. Jelleff Carr has recently been promoted to the rank of Professor of Pharmacology. Dr. Carr, co-author of the book "The Pharmacologic Principles," presented a paper before the Division of Sugar Chemistry of the American Chemical Society at the annual meeting of the American Chemical Society held in September, 1951, in New York City.

The Department of Pharmacology announces the appointment of 3 Fellows for 1951-52. Mary Frances Byrd, National Institutes of Health Fellow and Johnson S. L. Ling and Leonard S. Brahen, are Eli Lilly and Company Fellows.

Dr. John C. Krantz, Jr., Professor of Pharmacology, recently spoke at the Wilmington meeting of the Philadelphia Society of Anesthesiologists on "Chemical Constitution and Pharmacologic Response among the Volatile Anesthetics."

Dr. Krantz also addressed a Pharmacology Seminar at Yale University School of Medicine on "Studies in Vasodilatation" in March, 1951.

Dr. John C. Krantz, Jr., Professor of Pharmacology, School of Medicine, University of Maryland, has announced the following grants to the Department of Pharmacology for the year 1951-52.

A grant of \$6,000 from the United States Public Health Service National Institutes of Health has been made for studies on cardiovascular diseases. Eli Lilly and Company has awarded \$4,500 for the study of vasodilating drugs. The Ohio Chemical and Surgical Equipment Company has awarded the department a grant of \$3,500 for studies in anesthesia. The Emerson Drug Company has granted \$2,500 for studies on the mechanism of analgesia.

Dr. Raymond M. Burgison, Assistant Professor of Pharmacology, recently spoke at the Baltimore City Hospitals Symposium on Religion and Health on "Pharmacology" and at the American Chemical Society meeting at Johns Hopkins University, his subject being "Khellin and Related Compounds in the Treatment of Angina Pectoris."

Dr. Burgison also addressed the American Institute of Chemists on the subject "Modern Drugs in the Conquest of Disease."

DEPARTMENT OF DERMATOLOGY

Dr. Harry M. Robinson, Sr., presented a paper on "The History of Dermatology in Baltimore" at the November meeting of the Dermatologic section of the Baltimore City Medical Society.

Dr. Francis A. Ellis presented an exhibit on "Erythema Annulare Contrifugum" at the Southern Medical Association meeting in Dallas in November, 1951.

Dr. Harry M. Robinson, Jr. and Dr. Eugene S. Bereston, together with Dr. Frank Figge of the Department of Anatomy, have prepared an exhibit on the "Physiology and Pathogenesis of Microsporon Audouini" for the 1952 meeting of the American Academy of Dermatology in Chicago, Illinois. Several investigative projects are being conducted by various members of the department on the value of various drugs in the treatment of dermatoses.

Dr. H. M. Robinson, Jr., Dr. I. Zeligman, Dr. A. Shapiro and Dr. M. Cohen are conducting a long term study on the value of Chloramphenicol (Chloromycetin) and Terramycin in the treatment of various dermatoses.

Dr. H. M. Robinson, Sr., Dr. F. A. Ellis and Dr. H. M. Robinson, Jr. have made preparations to attend the Tenth International Congress of Dermatology which is to be held in London in July of 1952.



DR. A. M. BESTEBREURTJE

DEPARTMENT OF PEDIATRICS

Appointed Assistant Professor of Pediatrics

Dr. Annie M. Bestebreurtje has been recently named Assistant Professor of Pediatrics and Director of the Developmental Clinic at the University Hospital.

Dr. Bestebreurtje was born in Rotterdam, Holland and received her Bachelor of Arts degree from the University of Zurich in 1938. She received her basic medical training and a preliminary degree from the University of Zurich in 1940 and was graduated from the Johns Hopkins University School of Medicine in 1943. In 1944 she served an internship in Pathology at Duke University Hospital, a rotating internship at the Pittsburgh Medical Center in 1945 and an internship in Pediatrics at the Duke University Hospital from 1947-48. She also continued at Duke University as a Resident in Pediatrics from 1948-1950. In 1951 she became affiliated as an Assistant in Research at the Alfred I. duPont Institute in Wilmington, Delaware and was a visiting Fellow in Pediatrics at the Children's Hospital in Philadelphia.

She is a member of the Alpha Omega Alpha and Sigma Xi Societies.

The American Heart Association announces the approval of the Pediatric Cardiac Clinic at the University Hospital which is currently under the direction of Dr. Sidney Scherlis and Dr. Gibson Wells.

CANCER COMMITTEE NOTES

Dr. Edwin H. Stewart, Jr. has recently been appointed Cancer Co-ordinator to succeed Dr. Grant E. Ward who has resigned from the Faculty of the School of Medicine.

Mr. Robert W. Swain, Radiologic Physicist on the staff of the United States Marine Hospital has been named consultant in radiologic physics at the University Hospital.

DEPARTMENT OF MEDICINE

Division of Clinical Pathology

Dr. R. A. Neely, Senior Registrar, Department of Clinical Pathology, Royal Victoria Hospital, Belfast, Northern Ireland, is spending 6 months in our department (October, 1951–April, 1952).

Dr. M. S. Sacks presented a paper on "Acquired Hemolytic Anemia" at the annual meeting of the American Association of Blood Banks in Minneapolis, Minnesota, October 22–24, 1951.

The Baltimore Rh Laboratory and the Maryland Obstetrical and Gynecological Society jointly sponsored a symposium on erythroblastosis fetalis at the Medical and Chirurgical Faculty Building on October 31, 1951. The participants included Dr. Ernest Witebsky, University of Buffalo; Dr. Carl T. Javert, Cornell University; Dr. Louis K. Diamond, Harvard University; and Dr. Herman Yannet, Yale University.

DEPARTMENT OF BIOCHEMISTRY

Graduate research activities

During 1951 the following two year grants-in-aid for research were awarded to various members of the Department of Biological Chemistry

United States Public Health Service.....\$6,480.00

This grant was given to Dr. E. G. Schmidt, Professor of Biological Chemistry, to study the Identification, Determination, and Physiological Significance of Aromatic Acids in Urine. Miss Delma Decsi, B.S., Goucher College, 1951, has been appointed research assistant under this grant.

Williams-Waterman Fund of the Research Corporation.....\$3,600.00

This grant was given to Dr. E. J. Herbst, Associate Professor of Biological Chemistry, for a study of the Significance of Putrescine and Related Amines in the Me-

tabolism of Microorganisms. Mrs. Dorothy Hubbard, B.S., Syracuse University; M.S., University of Maryland, has been appointed a fellow under this grant.

Nutrition Foundation of New York.....\$4,000.00

This grant was given to Drs. R. E. Vanderlinde, Assistant Professor of Biological Chemistry, and E. G. Schmidt, to study the Effect of Chemotherapeutic Compounds Upon the Efficiency of Food Utilization. Gerald Kessler, B.S., City College of New York, has been appointed the Nutrition Foundation Fellow.

Bressler Alumni Reserve Fund.....\$3,000.00

This was a joint grant given to Drs. E. G. Schmidt and E. J. Herbst to study (a) The Microbiology of *Cryptococcus Neoformans*, and (b) The Significance of Putrescine in Metabolism. Under this grant, Alvin Geser, B.S., 1951, University of Maryland, School of Pharmacy, and Robert G. Leonard, M.S., Princeton, have been appointed fellows; however, Mr. Leonard, a naval reserve officer, has been recalled to duty and sent to London to join the North Atlantic Production Board.

A course for graduate students entitled *Enzymes and Metabolism* is being given by Dr. E. J. Herbst of this department for the 1951-1952 academic year.

Also being offered by this department is a Seminar devoted to Recent Advances in Biological Chemistry for the mutual benefit of all students and members of the faculty. This Seminar is held every Saturday morning.

MISSISSIPPI VALLEY MEDICAL SOCIETY 1952 ESSAY CONTEST

The Twelfth Annual Essay Contest of the Mississippi Valley Medical Society will be held in 1952. The Society will offer a cash prize of \$200.00, a gold medal, and a certificate of award for the best unpublished essay on any subject of general medical interest and practical value to the general practitioner of medicine. This can include medical economics and education. Certificates of merit may also be granted to the physicians whose essays are rated second and third best. Contestants must be members of the American Medical Association and resident citizens of the United States. The winner will be invited to present his contribution before the 17th Annual Meeting of the Mississippi Valley Medical Society to be held in St. Louis, Missouri, October 1, 2 and 3 1952. All contributions shall be typewritten in English in manuscript form, submitted in five copies, not to exceed 5000 words, and must be received not later than May 1, 1952. The winning essays of the 1950 contest appear in the January 1951 issue of the Mississippi Valley Medical Journal (Quincy, Illinois).

Further details may be secured from

Harold Swanberg, M.D., Secretary
Mississippi Valley Medical Society
209-224 W.C.C. Building, Quincy, Illinois

BALTIMORE Rh LABORATORY ENTERTAINS FOREIGN VISITORS

The Baltimore Rh Typing Laboratory, a closely affiliated, independently operated institution, housed in the Bressler Building at the School of Medicine, has been frequently visited not only by American clinicians but by many from abroad. The visitors' register in the laboratory shows over 26 visitors from 14 states and 23 from 17 foreign countries including Europe, Africa and the Far East.

DEPARTMENT OF MEDICINE
DIVISION OF INFECTIOUS DISEASES

Activities of the Department of Infectious Diseases during the year 1950-51 have been broad in their scope and interest'ng. Under the directorship of Dr. T. E. Woodward and his associate Dr. R. T. Parker an impressive program has been completed and in addition, members of the department have had time to participate in numerous scientific meetings throughout the country.

Aside from many addresses to lay groups, television broadcasts and lay seminars, members of the department have presented formal papers as follows: Nashville Academy of Medicine, Nashville, Tenn., "Management of Acute Bacterial Infections including Brucellosis, Typhoid Fever, Tularemia and Other Rickettsial Diseases." Marine Hospital, Baltimore, Md. "Treatment of Acute Infections with Antibiotics and Corticoids." Delaware Hospital Staff meeting, Wilmington, Del., "Management of Enteric Diseases." American Clinical and Climatological Association at Stockbridge, Massachusetts, "Cortison as an Ancillary Aid in the Control of Typhoid Fever and Rickettsial Diseases." Raleigh County Medical Society at Beckley, West Virginia, "Management of Acute Infections." Harrisburg Academy of Medicine, "Management of Acute Bacterial Infections including Brucellosis, Typhoid Fever, Tularemia and Other Rickettsial Diseases."

On December 11th Dr. Woodward spoke to the Men's Club of St. Michael's and All Angels Church on the interesting subject "Experiences with Field Medical Problems in Malaya". On December 15th members of the department addressed the New Mexico Medical Society at its meeting in Albuquerque. During the month of January additional papers were presented at several of the Baltimore Hospital Staff Meetings. From January 31st through February 28th, 1951, members of the department participated in the activities of the United States Army Plague Mission to South Africa and Madagascar. On February 19th, the subject "Management of Acute Infections with the Newer Antibiotics" was presented to the Wayne County Medical Society at its meeting in Detroit. On March 10th a paper "Antibiotic Therapy of Certain Pulmonary Lesions with a Discussion of their Non-specific Roentgen Appearance" was presented to the Eastern Conference of Radiologists at its meeting in Baltimore. Two panel discussions on "Antibiotics" were presented at the annual meeting of the American College of Physicians on April 10th at St. Louis. On April 29th, a paper "Antibiotic Treatment of Human Leptospirosis" was presented at the annual meeting of the American Society for Clinical Investigation. At the Medical Staff Conference at Johns Hopkins Hospital on May 10th, "The Problem of Immunity in the Rickettsiae" was discussed. The department has prepared a film entitled "Africa and Madagascar and the Role of Plague" which was first shown at the meeting of the Frederick County Medical Society at Frederick, Maryland on May 15th.

The bibliography for the Division of Infectious Diseases is equally as impressive as the program of meetings, lectures and seminars held by this group and is published herewith. The work done by this Division represents a considerable segment of the important research being performed in virus rickettsial diseases, typhoid, the use of antibiotics and the application of cortisone and ACTH to the therapy of infectious diseases.

DIVISION OF INFECTIOUS DISEASES:

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Have you contributed to the American Medical Education Foundation?

NEW APPOINTMENTS ARE ANNOUNCED AS FOLLOWS:

- Henry A. Briele, M.D., Associate in Post Graduate Surgery.
William H. Fisher, M.D., Associate in Post Graduate Surgery.
William J. McClafferty, M.D., Associate in Legal Medicine,
(Effective January 25, 1951.)
Moritz Michaelis, Ph.D., Research Associate in Psychiatry,
(Effective November 1, 1950.)
Harold E. Himwich, M.D., Lecturer in Physiology and Psychiatry,
(Effective November 1, 1950.)

APPOINTED INSTRUCTORS

- John T. Bracken, B.S., M.D., Instructor in Roentgenology.
John M. Dennis, B.S., M.D., Instructor in Roentgenology.
Edward L. J. Kreig, M.D., Instructor in Pathology.
Robert E. McCafferty, B.S., M.S., M.D., Instructor in Anatomy,
(Effective August 1, 1951)
James P. Miller, M.D., Instructor in Orthopaedic Surgery,
(Effective October 5, 1950)
Robert T. Parker, A.B., M.D., Instructor in Medicine.
Martin A. Robbins, M.D., Instructor in Urology.
George W. Smith, M.D., Instructor in Anatomy.
Ray B. Turner, B.S., M.D., Instructor in Pathology and Neuro-Anatomy.
Gladys S. Wadsworth, B.S., M.A., Instructor in Anatomy.
John D. Young, Jr., M.D., Instructor in Urology.
Frederick S. Wolf, M.D., Instructor in Neurology.

NAMED AS ASSISTANTS

- Robert C. Abrams, M.D., Assistant in Orthopaedic Surgery,
(Effective October 5, 1950)
Thomas G. Barns, Assistant in Surgery.
Jennifer S. Boehm, A.B., Assistant in Art as applied to Medicine,
(Effective July 9, 1951)
Ross C. Brooks, M.D., Assistant in Otolaryngology.
Melvin M. Borden, M.D., Assistant in Pediatrics.
Bernard Burgin, A.B., M.D., Assistant in Medicine.
Harry Cohen, B.S., M.D., Assistant in Obstetrics and Pathology.
R. Adams Cowley, M.D., Assistant in Thoracic Surgery and Assistant Director
Surgical Research.
Martha Curtis, B.S., R.N., Assistant and Assistant Director Medical Care
Clinic
(Effective January 1, 1951)
Marjorie R. Fleitzer, M.S.S., Assistant in Psychiatric Social Work,
(Effective October 1, 1950.)

Joseph B. Ganey, M.D., Assistant in Surgery.
 Marvin Goldstein, M.D., Assistant in Medicine.
 Caridad E. Gonzalez, M.D., Assistant in Pediatrics.
 Howard Goodman, M.D., Assistant in Pediatrics.
 Hermione Hunt Hawkins, M.A., Assistant in Clinical Psychology.
 Henry K. Jarrett, M.D., Assistant in Urology.
 Arthur Kandel, M.S., Assistant in Clinical Psychology,
 (Effective January 1, 1951).
 Jerome C. Kelley, A.B., M.D., Assistant in Obstetrics.
 Lel R. Lerman, M.D., Assistant in Dermatology.
 Buton V. Lock, M.D., Assistant in Medicine.
 Thomas D. Michael, M.D., Assistant in Otolaryngology.
 Donald W. Mintzer, M.D., Assistant in Medicine.
 Carl A. Myers, A.B., M.D., Assistant in Medicine.
 Joseph C. Myers, M.D., Assistant in Medicine.
 Pomeroy Nichols, Jr., M.D., Assistant in Neuro-Surgery.
 John C. Ozazewski, M.D., Assistant in Ophthalmology.
 J. H. Ramsey, M.D., Assistant in Pathology.
 John M. Rehberger, M.D., Assistant in Otolaryngology.
 Albert S. Steiner, M.D., Assistant in Otolaryngology.
 Jack Wexler, A.B., M.D., Assistant in Medicine.
 Jeraldine F. Wolfe, B.S., M.S., Assistant in Anatomy.
 Thomas Worsby, M.D., Assistant in Medicine.

FELLOWS

Frank Faraino, M.D., Fellow in Roentgenology.
 Joseph C. Furnari, B.S., M.D., Fellow in Roentgenology,
 (Effective January 1, 1951)
 Marvin Jaffee, M.D., Fellow in Psychiatry,
 (Effective September 15, 1950)
 Theodore Kardash, B.S., M.D., Research Fellow in Gynecologic Pathology,
 (Effective May 1, to August 31, 1951)
 Gerald Kessler, B.S., Nutrition Foundation Fellow in Biochemistry.
 Eugene McNinch, M.D., Fellow in Roentgenology,
 (Effective November 1, 1951)
 A. Gibson Packard, A.B., John F. B. Weaver Fellow in Anatomy,
 (Effective June 1 to July 31; September 1 to September 15, 1951)
 Sim Penton, M.D., Fellow in Thoracic Surgery,
 (Effective October 1, 1950)
 Gerardo B. Palanco, M.D., National Cancer Institute Trainee in Pathology.
 James H. Shell, B.S., M.D., Hitchcock Fellow in Gynecology.
 Virginia Suttonfield, M.D., Fellow in Psychiatry,
 (Effective January 1, 1951)
 Annemarie Weber, U.S.P.H. Fellow in Physiology
 (Effective April 16, 1951)

John I. White, Ph.D., U.S.P.H. Fellow in Physiology,
(Effective September 15, 1950)

RESEARCH ASSISTANTS

- Richard E. Brown, B.S., Research Assistant in Bacteriology
Betty J. Fax, Ph.D., Research Assistant in Psychiatry,
(Effective January 1, 1951)
Elinor G. B. Glinos, A.B., Research Assistant in Bio-Chemistry,
(Effective April 1, 1951)
William McKendree Headley, B.S., Research Assistant in Neuro-Surgery.
Carolyn F. Hendrickson, B.S., Research Assistant in Physiology,
(Effective April 1, 1951)
Robert C. Holcombe, A.B., Research Assistant in Pharmacology,
(Effective June 1 to July 31, 1951)
Anne McNicholas Laster, A.B., Research Assistant in Pediatrics,
(Effective June 7, 1951 to April 30, 1952)
Irwin H. Moss, A.B., Research Assistant in Medicine
(Effective June 1, 1951)
John Walker Powell, Ph.D., Research Assistant in Psychiatry,
(Effective April 1, 1951)
Elizabeth R. Steele, A.B., Research Assistant in Anatomy,
(Effective January 15, 1951)
Albert L. Tucker, A.B., Research Assistant in Pediatrics,
(Effective June 15 to August 31, 1951)
Amy Lee Wells, R.N., Research Assistant in Gynecologic Pathology,
(Effective May 1 to August 31, 1951)
David Wellenson, M.S., Research Assistant in Psychology,
(Effective September 1, 1950)

ELECTIONS TO THE FACULTY BOARD WERE ANNOUNCED AS FOLLOWS:

- H. Whitman Newell, M.D., Associate Professor of Psychiatry.
Frederick B. Smith, M.D., Associate Professor of Pediatrics.
Harry C. Hull, M.D., Professor of Clinical Surgery.
F. Edwin Knowles, M.D., Assistant Professor of Ophthalmology.
Frank D. Kaltreider, A.B., M.D., Associate Professor of Obstetrics.

POST GRADUATE COMMITTEE SECTION

POST GRADUATE COMMITTEE, SCHOOL OF MEDICINE

HOWARD M. BUBERT, M.D., *Chairman and Director*

Elizabeth Carroll, *Executive Secretary*

Post Graduate Office: Room 600

29 South Greene Street

Baltimore 1, Maryland

MEDICO-LEGAL SEMINARS

For the second time, the Post Graduate Committee of this University, in cooperation with Dr. Russell S. Fisher, Chief Medical Examiner of the State of Maryland, has sponsored a series of medico-legal seminars fashioned after those offered currently at the Medical School of Harvard University.

"Nutshell Studies of Crime," the incredibly accurate scale models of crime scenes which have been of such value in teaching enforcement officers to observe and deduce reasonably, were once again made available by their creator, Mrs. Frances G. Lee.

A particularly interesting and worthwhile feature of this year's seminar was the introduction of life-size reproductions of actual crime scenes. An entire room was arranged exactly as it was found by the police at the time of the crime. In some instances, actual evidence—suicide notes, murder weapons, etc.—was used to further authenticate the scenes.

Initially, the students were presented with a printed summary of facts relative to the unexplained death and, then, working in teams, the nineteen participating municipal and county police officers endeavored to scientifically study and evaluate the evidence.

This joint project of the Post Graduate Committee and the Medical Examiner's Office is receiving increasing attention from police authorities throughout the State, and, if this type instruction is rather unorthodox for inclusion in the activities of a medical school as in the case of Harvard when the idea was first advanced, its value has long since been proved by the enthusiastic response given to the work at Harvard by that University and enforcement authorities everywhere. We believe that it is well worth the attention of this School and deserves our enthusiastic support.

BASIC SCIENCES AS THEY APPLY TO THE PRACTICE OF MEDICINE

The Post Graduate Committee, keenly aware of the need for instruction in the basic sciences upon the part of men planning to enter the specialties, offered certain courses designed to satisfy this need. The original plan envisioned separate programs for different specialties. It was soon found, however, that the multiplicity of courses resulting placed a tremendous burden upon our teaching staff and our administrative resources.

During the past year, Dr. Otto Brantigan of this Committee suggested the creation of an over-all course which would be applicable to all branches of clinical specialization and, thus, materially reduce the burden upon the Committee's resources in teaching personnel.

A subcommittee, consisting of Dr. Dietrich C. Smith, Dr. Frank H. J. Figge, and Dr. Otto Brantigan, was appointed under the chairmanship of Dr. Smith. This subcommittee, in an effort to evaluate the possible response upon the part of physicians most likely to be interested in such training, sent questionnaires to a selected group which represented, in the main, house officers of Baltimore Hospitals. The response was most favorable.

A carefully conceived and planned program was drawn up, and instruction was started on October third under the direction of Dr. Smith who has been indefatigable in his efforts to promote this project. The enrollment reached the gratifying total of 59, and those participating have been most enthusiastic in their praise. The Post Graduate Committee believes that this course will fill a very real need.

The complete course consists of 32 two-hour sessions which are held once weekly in the lecture hall on the second floor of the Bressler Building. A few representative items from the schedule are as follows: Respiratory Physiology, Electrocardiography and Cardiac Conduction, Adrenal Steroids and Stress, Physiology of the Sex Hormones, Pharmacology of Antibiotics, Pain—Anatomy and Physiology.

The faculty consists of the following from the Post Graduate teaching staff:

C. Jelleff Carr, Ph.D.	Professor of Pharmacology
Frank H. J. Figge, Ph.D.	Professor of Anatomy
Dietrich C. Smith, Ph.D.	Professor of Physiology
Frederick P. Ferguson, Ph.D.	Associate Professor of Physiology
Milton S. Sacks, M.D.	Associate Professor of Medicine
J. McCullough Turner, Ph.D.	Associate Professor of Physiology
H. Patterson Mack, M.D.	Associate in Anatomy
George W. Smith, M.D.	Assistant in Neurosurgery

ANATOMY OF THE HEAD AND NECK AS APPLIED TO EYE, EAR, NOSE, AND THROAT

Dr. Eduard Uhlenhuth, Professor of Anatomy, in conjunction with the Post Graduate Committee, announces the creation of a course in Anatomy of the Head and Neck as Applied to Eye, Ear, Nose, and Throat.

Dr. Nathan Snyder, an eye, ear, nose, and throat specialist, will give the instruction and, because he considers Dr. Snyder unusually well qualified to present this subject matter, Dr. Uhlenhuth is most gratified that he has accepted this responsibility. The Department of Anatomy believes that this will be one of its finest courses. There is an enrollment of three students, and those participating have praised the course highly.

MARYLAND ACADEMY OF GENERAL PRACTICE

On December the sixth, the third one-day semiannual clinical session given by the Post Graduate Committee at the University Hospital under the sponsorship of the

Academy was held. Dr. Lauriston L. Keown, Chairman of the Educational Committee of the general practice group, as usual, cooperated most effectively with the Committee. The program was as follows:

	9:45	Howard M. Bubert, M.D. Chairman and Director, Post Graduate Committee University of Maryland	
	9:50	H. Boyd Wylie, M.D. Dean, School of Medicine University of Maryland	
10:00-10:50	Common Foot Problems (Metatarsal, run-over heels, etc.)		Allen Fiske Voshell, A.B., M.D. Professor of Orthopedic Surgery University of Maryland
11:00-11:50	Taxes and the Doctor		Leonard B. Rowles, Sr., C.P.A. Attorney at Law Instructor of Accounting at the Johns Hopkins University
12:00-12:50	Anal, Rectal Office Procedures		Monte Edwards, M.D. Clinical Professor of Surgery Professor of Proctology University of Maryland
1:00-1:50	Antibiotics in the Treatment of Venereal Diseases		Harry M. Robinson, Jr., B.S., M.D. Assistant Professor of Dermatology Associate in Medicine University of Maryland
1:50-2:50	Luncheon		
3:00-3:50	Childhood Tuberculosis		A. H. Finkelstein, M.D. Associate Professor of Pediatrics University of Maryland
4:00-4:50	Eye Diseases in Children and Old People including Strabismus, Cataract, etc.		F. Edwin Knowles, Jr., M.D. Assistant Professor of Ophthalmology and Chairman of the Department University of Maryland

It is the sincere wish of the Committee that these semiannual meetings will become increasingly popular and well attended. If past experience can be considered a criterion, they believe that this hope will be fulfilled.

ALUMNI ASSOCIATION SECTION

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(*ex-officio*)

GEORGE H. YEAGER, M.D.

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The names listed above are officers for the term beginning July 1, 1951 and ending June 30, 1952.

PRESIDENT'S LETTER

To read the newspapers today, the layman would get the impression that the medical profession is falling short of fulfilling its duties to the American public. Distorted stories of exorbitant fees, high incomes of physicians, lack of interest in patients, unwillingness to answer pleas for medical care, and similar accusations are passed by word, both printed and oral, from group to group. Do such conditions exist? It is time the public should be made aware of our side of the story.

Every alumnus, even the most recent, has witnessed almost miraculous progress in the field of medical science. Today the average citizen lives longer and more comfortably than ever before. Much of this has been brought about by the thousands of medical men who have devoted years to research, seeking new ways of alleviating suffering. Their dedication springs from a sincere free wish to extend man's life.

Physicians have gladly volunteered, joined and backed medical insurance groups so that even those in the lowest income brackets might have advantages once available only to the very wealthy. Certainly all of us are aware of the minimum fees collected in these cases.

These past fifty years have seen the rise of clinics and medical care programs, functioning because of the interest of men whose time is willingly given.

Let us look at the records in maternal care during 1949 in these United States:—less than one maternal death per thousand live births. Let us look at the decrease of mortality rate among children, the decrease of chronic illnesses among patients formerly considered bed patients, the decrease of illnesses due to nutritional disorders. Each of these self-evident facts speaks well of the American physician today.

The increased cost of medical care is a current topic of discussion in all quarters

and so is the increased cost of living. While it would seem this rise has been a great one, compare the number of days spent in the hospital by the patient today with the long hospitalization periods of say, ten years ago. The average patient does get well more quickly and his earning power is not so greatly weakened as before. Isn't better medical and nursing care to be credited with this?

Penicillin, aureomycin, chloromycetin, terramycin, streptomycin, are words which have now become so much a part of everyday conversation that the patient takes them for granted. The fact that medical men have given years to research in their discovery and perfection, fails to impress the layman. How many diseases are now only a name in a textbook because of the curative power of these remarkable discoveries? Many patients are saved hospitalization periods because these medicines can be administered at home, saving the hospital expense and the loss of working hours.

The Army program has taken a large number of our doctors who are distinguishing themselves by their devotion to those in battle. New stories of the heroism of the medics in Korea reach us every day.

The American Medical Profession has certainly not been indifferent to the health needs of the public, both in peacetime and in war, and will always continue to do more than its share in any national emergency.

We have a new year ahead of us, and I wish to extend to the Medical Alumni Association all my very best wishes for a happy New Year.

DANIEL J. PESSAGNO, M. D., President.

~~~~~HAIL '02~~~~~

Congratulations are in order to the Golden Jubilee classes of 1902 who this year mark the half century milestone and become honorary members in the Medical Alumni Association:

From available sources we print with pride the rather large group of alumni who will be awarded 50 year certificates at the Alumni Day ceremonies on June 5, 1952

University of Maryland, '02

ROBERT F. BOOKER	ROBERT O. LYELL
BASIL B. BRIM	SAMUEL PULESTON
WILLIAM A. CARRIGAN	HARRY D. PURDUM
WILLIAM D. CAWLEY	BRISCOE B. RANSON, JR.
JAMES K. COLE	TAOUFIK T. RASSY
CLARENCE E. COLLINS	MORRIS ROSENTHAL
HARRISON F. COOPER	MYER SCHWARTZ
HOAGLAND C. DAVIS	ARTHUR M. SHIPLEY
S. R. DONOHUE	ALBERT G. SINGEWALD
COOPER R. DREWRY	CHARLES E. SNYDER
ALBERT D. DRISCOLL	ALBERT S. STARLINGS
WILLIAM EMRICH	BERTON W. STORRS
C. D. GRUVER	EDWARD K. TOZER
WADE R. HUMPHREY	PHILLIP L. TRAVERS
PHILEMON S. LANSDALE	WILLIAM KELSO WHITE
ROBERT B. LAWSON	JAMES M. WILLIAMS
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GEORGE W. YOUTREE

Baltimore Medical College

NATHANIEL BLITZER	N. W. JONES
THOMAS P. BOYLE	CHARLES A. KEAGY
FLETCHER H. BROOKS	J. R. KIRBY
MAURICE O. BROWN	T. A. KURR
R. S. CAUTHEN	CHARLES LAPMAN
LOUIS CHARGIN	DANIEL MACKILLOP
CLYDE A. CLAPP	C. N. MITCHELL
S. M. DENT	WALTER W. OSGOOD
WILLIAM E. DOLAN	M. J. O'TOOLE
LLOYD H. FEICK	FRANK PATTERSON
JAMES GALLAGHER	WILLIAM J. POWERS
THOMAS GLASGOW	DANIEL J. PRICE
D. L. GLYNN	J. T. SCANNELL
RANSOM A. GREENE	W. STAPLEY
J. M. GRIFFITHS	C. H. STEDMAN
THEODORE F. HAHN	S. CLARK STEELE
ELMER E. HALL	JOHN SYMINGTON
HARRY M. HARTMAN	EMERY J. THOMAS
OTTO M. HENDERSHOT	W. D. TURNER
V. D. HOLBROOK	CHARLES H. VENUS
E. G. HUMMELL	

EDWARD D. WARREN

College of Physicians and Surgeons

MAX BRUCK	JOHN E. INNERS
MATTHEW G. CONLIN	HUXLEY H. JOHNSON
THORNE CORNELIUS	THOMAS S. MCCABE
DWIGHT P. CRUIKSHANK	CHARLES F. MERRILL
ANDREW J. DOLAN	CHARLES B. MESSERLY
J. H. DOYLE	FRANCIS P. O'NEIL
WILLIAM M. GARRISON	R. H. OWENS
W. F. HALE	SAMUEL W. PAGE
ALBERT B. HEADLEY	ALFRED H. QUESSY
Z. P. HENRY, JR.	CHARLES F. REILLY
DELBERT HESS	A. P. TRAYWICK
GEORGE L. HILTON	ALFRED ULLMAN

JAMES L. YAGLE

SINAI HOSPITAL RESIDENTS' REUNION

The first reunion of former residents in Obstetrics and Gynecology of the Sinai Hospital in Baltimore was held on November 23 and 24, 1951 at the hospital. This program under the Chairmanship of Dr. William Schuman, is to be an annual feature of the hospital activities.

Those members of the Alumni Association of the University of Maryland School of Medicine who have been residents in Obstetrics at the Sinai Hospital include **Drs. Harry Goldmann, Ernest Edlow, William Schuman, Archie R. Cohen, Wilfred Konigsberg, Raymond Goldberg and Robert Farkas.**

DR. CHARLES E. GILL NAMED TO NEW POST

Dr. Charles E. Gill, class of 1927 and until recently District Health Officer of the Massachusetts Department of Public Health in Pittsfield, Massachusetts, has been named Medical Director of Brandywine and Edgewood Sanatoriums in Wilmington, Delaware.

Dr. Gill, a native of Georgetown, Delaware, received his collegiate training at the University of Delaware and after his graduation from the School of Medicine



DR. CHARLES E. GILL

attended the School of Public Health at Harvard University as a postgraduate student. During World War II, Dr. Gill served as a Lieutenant Colonel in the Medical Corps. Since the reorganization of the Bulletin Dr. Gill has been quite active as a Contributing Editor and has been most active among the New England Alumni of the three Baltimore Schools.

ITEMS

Dr. William P. Benjamin, class of 1949, recently completed a year of psychiatric residency at the Rockland State Hospital, Orangeburg, New York and is at present Resident in Psychiatry at the Winter Veterans Administration Hospital. Dr. Benjamin is also listed as a Fellow in the Menninger School of Psychiatry, Topeka, Kansas.

Dr. Samuel L. Fox, class of 1938, Associate in Otolaryngology at the School of Medicine, recently presented papers entitled *Clinical Applications of Pharmacologic*

Principals and Rational Therapy in Otolaryngology and Post-Tonsillectomy and Adenoidectomy Hemorrhage: Review of Subject and Report of an Extensive Series at the Clinical Session of the Virginia Society of Ophthalmology and Otolaryngology held at Richmond, Virginia, November 27-30, 1951.

Dr. W. W. Bindeman, class of 1947, has returned from active duty with the United States Army Medical Corps in Korea and is now on the Resident Staff of the Department of Surgery at the Lutheran Hospital of Maryland.



Class of 1926 at June, 1951 Reunion

1. H. E. Levin; 2. Dr. Charles Bagley, Jr.; 3. Joseph Levin; 4. Louis Jerome Wesley; 5. Margaret B. Ballard; 6. Elizabeth B. Sherman; 7. Louis T. Lavy; 8. Emanuel Manginelli; 9. John A. Askin; 10. Irving C. Bronsten; 11. Ersie Van Teagarden; 12. William C. Polsue; 13. Albert F. Moriconi; 14. Abraham S. Rothberg; 15. Samuel Weinstein; 16. H. Elias Diamond; 17. Harry Anker; 18. Albert A. Rosenberg; 19. ?; 20. Maurice L. Teitelbaum; 21. Jacob Schmuckler.

Dr. Ernest Wolf, class of 1950, who completed his internship at the Jewish Hospital in Cincinnati, Ohio is now Assistant Resident in Psychiatry at the Cincinnati General Hospital, Cincinnati, Ohio.

Dr. Stanley Steinbach, class of 1945, has opened his office for the practice of medicine at 3334 Dolfield Avenue, Baltimore 15, Maryland.

Dr. Kenneth Snider, class of 1949, who served his internship at the Garfield Memorial Hospital in Washington, D. C. and has recently completed his residency in medicine at the Mt. Alto Veterans Administration Hospital, has opened his office for the practice of medicine in Ocean View, Delaware.

Dr. David Bacharach, class of 1942, announces the opening of his office at 901 Cathedral Street, Baltimore for the practice of diseases of the skin.

Dr. John G. Brickner, class of 1947, who recently completed his residency in psychiatry at the Seton Institute, has opened his office for the practice of psychiatry at 1120 Saint Paul Street.

Dr. George Callender, class of 1945, has completed his residency in orthopedic surgery at the Charleston General Hospital, Charleston, West Virginia.



Dr. John Z. Bowers addresses A.M.A.

Dr. John Z. Bowers, class of 1938, and currently Dean of the University of Utah College of Medicine, presented the first paper before the General Scientific Meeting at the meeting of the American Medical Association at Atlantic City in June, 1951. Dr. Bowers spoke on "The Medical and Peacetime Aspects of Atomic Energy."

Dr. Philip Gregory, class of 1936, is in practice at Boothbay Harbor, Maine.

Dr. T. Lacey Morrow, class of 1944, who completed his post graduate training in general surgery at the Lutheran Hospital, Baltimore, July 1, 1951, has entered the practice of general surgery at Chester, South Carolina.

Dr. Hames H. Shell, Jr., class of 1945, who recently finished post graduate training at the University Hospital, has announced the opening of his office at 214-217 Medical Arts Building, Baltimore, for the practice of obstetrics and gynecology.

Dr. R. Sumter Griffith, P & S, class of 1886, was recently honored by the Union Royal Arch Masonic Chapter #2 of Staunton, Virginia. Dr. Griffith is the oldest member of that organization.

Dr. Morton L. Levin, class of 1930, of Albany, New York, on leave as director of the Commission on Chronic Illness with headquarters in Chicago since 1949, has returned to his former post of Assistant Commissioner for Medical Services in the New York State Department of Health.

Dr. Francis A. Reynolds, class of 1921, of Athol, Massachusetts, has been appointed medical examiner in northern Worcester County.

Dr. Robert C. Gwin, B.M.C., class of 1895 of Brookline, Massachusetts, was elected treasurer of the Massachusetts Society of Examining Physicians at its annual meeting at the Harvard Club in Boston on May 2, 1951.

Dr. Edward J. Sokolski, class of 1945, who has recently completed his Residency in Gynecology and Obstetrics at St. Agnes Hospital in Baltimore, will practice Obstetrics and Gynecology in Danbury, Connecticut. Dr. Sokolski has located his office at 246 Main Street.

Dr. Arthur T. Hall, Jr., class of 1945, who completed his Residency in General Surgery at St. Agnes Hospital, Baltimore, has opened his office for the practice of General Surgery at the Latrobe Apartments, Charles and Read Streets, Baltimore.

Dr. Vernon Milloff, class of 1944, is now located in Hollywood, Florida where he is engaged in General Practice.

Dr. Milton G. Abarbanel, class of 1938, is in practice at 271 Union Street, Hackensack, New Jersey.

Dr. E. Irving Baumgartner, class of 1931, was recently elected Secretary of the Section on General Practice at the meeting of the American Medical Association at Atlantic City in 1951.

Dr. H. Douglas Cooper, class of 1947, is now practicing the specialty of Otolaryngology at the Physicians and Surgeons Clinic, 1101 Maine Street, Quincy, Illinois.

Dr. A. A. Goetz, class of 1946, has opened his office for the practice of Internal Medicine at 450 Sutter Street, San Francisco, California.

Dr. E. Anne D. Mattern, class of 1947, is now a Resident in Surgery at the Garfield Hospital, Washington, D. C. Dr. Mattern recently won the staff prize for her paper "Hydatiform Mole and Chorionepithelioma".

Dr. David Will, class of 1943, until recently Resident Surgeon at the University Hospital in Baltimore, has announced the opening of his office for the practice of General Surgery at 512 Cathedral Street, Baltimore.

Dr. Ross C. Brooks, class of 1943, has announced the opening of his office in the Medical Arts Building, Baltimore for the practice of Ophthalmology and Otolaryngology.

OBITUARIES

Dr. Frank W. Smith

Dr. Frank W. Smith, class of 1900, Baltimore Medical College, and one of the prominent physicians of Kent County, Maryland, died on July 16, 1951 aged 71.

Shortly after his graduation he moved to Kent County, settling at Fairlee. Throughout his entire life he was proud of the fact that he was an oldtime general practitioner. However, he was constantly active in post graduate studies and kept abreast of the rapid advances made during his long and active practice. Dr. Smith was Vice-President of the Medical and Chirurgical Faculty of Maryland, a Vice-President of the Kent County Savings Bank and at one time served as County Registrar of Wills. Dr. Smith was one of the founders of the Kent and Queen Anne County Hospital.

Dr. John C. King

Dr. John C. King, P & S, class of 1893, died on June 24, 1951. Dr. King had practiced in Virginia for more than 50 years and at one time was Superintendent of the Southwestern State Hospital at Marion. He later founded the St. Albans Sanatorium at Radford.

Blandford, Mark Hardin, Columbus, Ga.; B. M. C., class of 1908; aged 66; died, April 6, 1951, of diabetes mellitus.

Bowen, William Sinclair, Washington, D. C.; class of 1888; aged 84; died, May 18, 1951, of coronary thrombosis and arteriosclerosis.

Britton, Roland L., Mays Landing, N. J.; P & S, class of 1907; aged 64; died, March 1, 1951, of coronary occlusion.

Daugherty, Thomas E., Baltimore, Md.; B.M.C., class of 1898; aged 78; died, April 22, 1951, of bronchopneumonia.

Hummel, Leonard Malcolm, Baltimore, Md.; class of 1934; aged 41; died, February 7, 1951.

Jenifer, Daniel, of St. Thomas, Towson, Md.; class of 1904; aged 67; died, April 30, 1951, of myocardial infarction.

Kinne, George Lyman, Holyoke, Mass.; class of 1887; aged 90; died, April 4, 1951, of myocardial failure, following a hip fracture.

Knox, Charles Albert, Ridgefield, Park, N. J.; B.M.C., class of 1904; aged 72; died March 9, 1951, of coronary thrombosis.

Nunemaker, Tunis, Portsmouth, O.; P & S, class of 1901; aged 78; died, May 16, 1951 of carcinoma of the stomach and cerebral hemorrhage.

Onnen, John G., Baltimore, Md.; P & S, class of 1908; aged 67; died, April 18, 1951, of arteriosclerosis and aortic stenosis.

Rauschenbach, Charles William, Hammond, Ind.; class of 1912; aged 61; died, February 17, 1951, of carcinomatosis.

Sooy, John Lynch, Pleasantville, N. J.; P & S, class of 1912; aged 64; died, March 29, 1951, of coronary thrombosis.

Spyker, John Huston, Decatur, Ill.; P & S, class of 1902; aged 74; died, March 5, 1951, of heart disease.

Summerbell, Ferris, Fallon, Nev.; B.M.C., class of 1905; aged 73; died, March 2, 1951, of pulmonary edema and cardiac decompensation.

Warren, John Fremont, Ithaca, N. Y.; class of 1920; aged 55; died, May 13, 1951, of coronary thrombosis.

Dr. Frank Di Stasio

Dr. Frank Di Stasio, class of 1933, a practicing radiologist in New Haven, Connecticut since 1940, died on October 20, 1951, aged 45. Dr. Di Stasio had his basic training in radiology at the University Hospital, completing his residency in 1939. He was a diplomate of the American Board of Radiology.

Abersold, George William, Wheeling, W. Va.; P & S, class of 1913; aged 68; served during World War I; died, July 26, 1951, of coronary occlusion.

Bowles, Eugene K., Jordan Mines, Va.; B.M.C., class of 1907; aged 65; died, May 18, 1951.

Brown, Hubert L., Hinsdale, N. H.; B.M.C., class of 1903; aged 76; died, June 24, 1951.

Carroll, John William, Russellville, S. C.; class of 1903; aged 73; died, May 4, 1951, of coronary thrombosis.

Cummins, Thomas J., Mineville, N. Y.; P & S, class of 1903; aged 74; died, September 13, 1951, of coronary occlusion.

Curtin, John Francis, North Abington, Mass.; B.M.C., class of 1906; died, June 4, 1951.

Davis, John Allen, Roanoke, Va.; class of 1889; aged 84; died, June 19, 1951, of kidney tumor.

Dougherty, Gerald Luke, Wilmington, Del.; class of 1908; aged 70; served during World War I; died, August 9, 1951, of myocardial infarction.

Eubank, Charles D., Vinton, Va.; P & S, class of 1884; aged 92; died, August 21, 1951.

Farver, Moses A., Middlebury, Ind.; B.M.C., class of 1893; aged 84; died, June 29, 1951, of mitral stenosis.

Free, Evans Murphy, Stewartstown, Pa.; P & S, class of 1899; aged 74; died, June 13, 1951, of coronary thrombosis.

Gannon, Clarence Peter Lee, Kingston, N. Y.; class of 1916; aged 67; served during World War I; died, June 22, 1951.

Gousse, William Louis, Fairfield, Me.; B.M.C., class of 1911; aged 73; died, June 16, 1951, of cerebral thrombosis and diabetes mellitus.

Harrell, David Lemuel, Suffolk, Va.; P & S, class of 1895; aged 79; died, July 28, 1951, of arteriosclerosis, hypertension and diabetes mellitus.

Heinen, Gustaf Frederick, Toledo, O.; B.M.C., class of 1902; aged 79; died, July 6, 1951, of Parkinson's disease.

Hetherington, Ellery M., Kansas City, Mo.; P & S, class of 1888; aged 91; died, September 8, 1951.

Hill, William Isaac, Albemarle, N. C.; class of 1897; aged 81; died, May 23, 1951, of coronary occlusion.

King, John Cephas, Radford, Va.; P & S, class of 1893; aged 80; died, June 24, 1951, of carcinoma of the pancreas.

- Mackenzie, Alexander Ross**, Huntington, W. Va.; class of 1910; aged 65; died, July 18, 1951, of coronary thrombosis.
- Mahady, Stephen Augustus**, Utica, N. Y.; B.M.C. class of 1902; aged 73; served during World War I; died, June 19, 1951, of coronary thrombosis.
- Mansuy, John Louis**, Ralston, Pa.; P & S, class of 1897; aged 81; died, August 13, 1951, of cerebral thrombosis.
- McConachie, Alexander Douglas**, Baltimore, Md.; class of 1890; aged 87; died, September 21, 1951, of angina pectoris.
- McMillan, William Andrew**, Charleston, W. Va.; P & S, class of 1903; aged 76; died, October 1, 1951, of cerebrovascular accident.
- Meeker, Frank Butler**, Newark, N. J.; B.M.C., class of 1899; aged 84; died, September 4, 1951, of hemorrhage due to duodenal ulcer.
- Moore, William Banner**, Rural Retreat, Va.; P & S, class of 1893; aged 81; died, May 30, 1951, of cerebral hemorrhage.
- Paige, LaVerne D.**, Spring Creek, Pa.; B.M.C., class of 1898; aged 81; died, September 3, 1951, of myocarditis and carcinoma of the larynx.
- Pearce, Willia Herbert**, Baltimore, Md.; class of 1891; aged 80; died, July 28, 1951, of coronary occlusion.
- Smith, Frank W.**, Chestertown, Md.; B.M.C., class of 1900; aged 71; died, July 18, 1951, of coronary thrombosis.
- Stevenson, Charles Robert**, Ebensburg, Pa.; class of 1897; aged 76; died, September 13, 1951, of exfoliative dermatitis.
- Valentine, Aloysius W.**, Washington, D. C.; class of 1904; aged 76; died, July 5, 1951, of arteriosclerotic cardiovascular disease.
- Wellman, Harrison M.**, St. Petersburg, Pa.; class of 1916; aged 62; died, June 7, 1951.
- Wolfe, Lewis E.**, New Berlin, Pa.; P & S, class of 1891; aged 85; died, August 31, 1951, of chronic nephritis.

UNIVERSITY OF MARYLAND BIOLOGICAL SOCIETY

Program for the Academic Year, 1950-51

November 9, 1950—Dinner Meeting—Park Plaza Hotel

“Use of Radio-Isotopes in Scientific Research” by **Dr. Edward McCrady**, Chief, Biological Division, Oak Ridge National Laboratories.

December 13, 1950—Chemical Hall, School of Medicine

“Mechanism of Vasomotor Action of Quinidine” by **Dr. Go Lu**, Department of Pharmacology, School of Medicine, University of Maryland.

January 17, 1951—Bressler Library, School of Medicine

“The Experimental Production of Congenital Anomalies in Rats” by **Dr. Christine Gilbert**, Carnegie Institution of Washington.

March 14, 1951—Bressler Library, School of Medicine

“The Early Effects of Pressure Within the Pancreatic Ducts on Serum Amylase and Pancreatic Histology” by **Dr. Gordon E. Gibbs**, Department of Pediatrics, School of Medicine.

“The Pharmacologic Evaluation of Local Anesthetics (With Particular Reference to Meta-Hydroxyprocaine)” by **Dr. Raymond M. Burgison**, Department of Pharmacology, School of Medicine.

Many compounds having analogous structures have been introduced into the practice of anesthesiology since the synthesis of procaine in 1905. Some of these substances have exhibited certain advantages over the action of procaine, but in most instances potency as a local anesthetic and systemic toxicity have paralleled each other as properties of these agents. Procaine, therefore, has remained the most generally used of all the local anesthetics. Meta-Hydroxyprocaine (diethyl-aminoethyl-3-hydroxy-4-amino benzoate) has been synthesized and studied as a local anesthetic. When used in a 2 per cent aqueous solution as the sodium or potassium salt, meta-hydroxyprocaine exhibited greater anesthetic potency than procaine when tested on the frog's foot (Turch method), in the rabbit's cornea, and by the guinea pig sciatic nerve method (Schackell), but when compared to procaine hydrochloride by the dog sciatic nerve method under faradic stimulus, by the human intradermal wheal method, and as a spinal anesthetic in dogs, the compound appeared to possess no greater potency than procaine. Toxicity studies on meta-hydroxyprocaine revealed that this compound is less toxic than procaine hydrochloride. The MLD averaged 72 mg./kg. versus 44 mg./kg. by intravenous injection into the rabbit; the LD₅₀ by intraperitoneal injection into the rat was found to be 240 mg./kg. versus 184 mg./kg.; and in the mouse, 220 mg./kg. versus 180 mg./kg. Electrocardiograms observed on dogs during and after injection of 1 cc. of 2 per cent sodium meta-hydroxyprocaine aqueous solution were essentially normal. (Note: A paper on these studies appeared in *Anesthesiology*, **12**: 57 (Jan.) 1951.)

April 18, 1951—Bressler Library, School of Medicine

“Effects of Acute Decompression Stress Upon Some Blood Components, Especially Leucocytes, in Intact and Splenectomized Cats” by **Dr. D. C. Smith and Frances C. Brown**, Department of Physiology, School of Medicine

“The Effect of Analogs of Putrescine on the Growth of *Hemophilus parainfluenzae*” by **Dr. Edward J. Herbst**, Department of Biochemistry, School of Medicine.

New bacterial growth factors which have not heretofore been implicated in the growth processes of any organism, have been identified as essential metabolites for the in vitro culture of *Hemophilus*

parainfluenzae. Five compounds, including the diamines putrescine and 1,3-diaminopropane, the polyamines, spermine and spermidine, and the guanidino-amino derivative, agmatine are active as growth factors for this microorganism.

A study of the mode of action of these compounds in the metabolism of *H. parainfluenzae* is in progress. A number of N-alkyl or N-N'-di and tetraalkyl analogs of putrescine were tested as growth inhibitors and were found to interfere with the normal growth response of the organism. This inhibition could be reversed by increasing the concentration of putrescine, or the other growth factors, in the medium. Detailed inhibition and reversal data were presented for one of the putrescine analogs, N,N'-dimethyl-1,4-diaminobutane. 2.5 mg. of this inhibitor per 4 ml. of culture medium will completely inhibit the normal growth response of the microorganism to 2.5 γ per ml. of putrescine. However, in the presence of 25 γ per ml. of putrescine, the inhibitory effect of the analog is completely reversed.

Spermine, spermidine, and 1,3-diaminopropane are more effective than putrescine in reversing the toxicity of the inhibitor while agmatine is less effective. Other putrescine analogs have essentially the same effect on the growth of *H. parainfluenzae*.

It was concluded that certain alkyl derivatives of the growth factor putrescine function as metabolic antagonists and may prove useful in studying the mode of action of this compound and its congeners.

May 16, 1951—Bressler Library, School of Medicine

"A Study of Muscle Proteins Obtained from Skeletal Muscles by Mild Extraction" by **Dr. W. R. Amberson, John White, Sylvia Himmelfarb, and Hans Hoch**, Department of Physiology, School of Medicine.

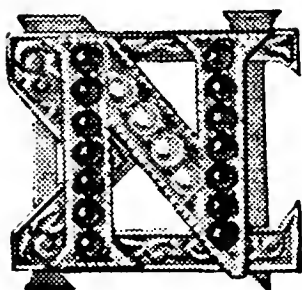
FRATERNAL NEWS SECTION

PHI DELTA EPSILON



The fraternity began the 1951 season with a smoker on October 11th. New students were welcomed and an instructive talk entitled "Trends in Medical Education" was presented by Dr. Jacob Finesinger, Professor of Psychiatry at the School of Medicine. His talk was built around his affinity for medical aphorisms and was entitled "Clinical Burrs." On November 10th the group was proud to initiate 23 new members. The initiation was followed by a buffet supper in honor of the new members. The evening closed with a house dance.

NU SIGMA NU



The first smoker of the Beta Alpha Chapter of Nu Sigma Nu was held on September 21, 1951. Drs. Mech, Figge, Smith, Wagner, Krahle and Acton addressed the Chapter.

On September 28, 1951, the second smoker was held. **Dr. Eugene Rex**, former president of the Chapter (1949-50) informed the new students about the problems of internship. Initiation of 22 new members took place on Thursday, October 17, 1951.

Lieutenant Robert S. Mosser recently began an internship at the University Hospital, Baltimore. Lieutenant Mosser is participating in the USAF Institute of Technology program for officer education in advanced scientific and technical fields.

Beta Alpha now boasts the highest enrollment since its foundation at the University of Maryland.

Bulletin OF THE SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

VOLUME 37

April, 1952

NUMBER 2

EDITORIAL

ANTIBIOTICS IN OBSTETRICS

The introduction of the various antibiotics has created almost as great a change in obstetrics as in any branch of medicine. Not only has puerperal infection been relegated to a very minor place as a cause of maternal death, but other infections are being successfully treated and many lives are being saved.

Until quite recently pneumonia occurring during pregnancy caused abortion in a high proportion of the cases and since this abortion usually took place when the mother was most acutely ill, it very often was enough to precipitate collapse and death. We considered it most fortunate indeed in these cases if only one life (that of the child) was lost. The condition today presents infinitely more cheerful aspects. Pyelitis or pyelonephritis as a complication of pregnancy was very difficult to treat and it was generally conceded that complete cure before delivery was rare. The remedies were many and it was at times necessary to empty the uterus to save the patient's life. Today the condition is treated with the proper antibiotic and is usually of short duration. Syphilis in the pregnant woman responds as well to antibiotic therapy as in the non-pregnant woman, and since these drugs readily traverse the placental barrier, the infant is quite adequately protected. In the prophylaxis against, or in the treatment of ophthalmia neonatorum, penicillin, either as an injection or in the form of an ophthalmic ointment is so successful that it has replaced the instillation of silver nitrate in many large clinics.

The greatest gains by the administration of antibiotics have been made in the field of prevention and treatment of uterine infection for the very evident reason that every pregnant and parturient woman is exposed to this type of infection. Patients having incomplete abortions, which are frankly infected when first seen, are now given a course of antibiotic therapy and the uterine contents evacuated. To do this without antibiotics would almost certainly result in a rapid and probably fatal spread of the infection. To wait for nature to expel the offending material, as was the practice before the introduction of antibiotics, results in a much longer hospitalization and in a certain amount of chronic invalidism and possible permanent sterility.

The patient whose membranes rupture and who does not go into labor within 24 hours presents a problem, in that vaginal organisms quickly find their way into the uterus and from there into the respiratory passages of the baby. The resulting infection produces a genuine hazard to the lives of both mother and child. Many of the stillbirths which follow this type of accident result from pneumonia. When the generally accepted method of keeping these patients on antibiotics until delivery is followed both morbidity and mortality are significantly decreased.

In prolonged labor the antibiotics have been found to be of immense value. Here again there is a very real danger of infection. Therefore, it is common practice to administer "prophylactic penicillin" to all patients in whom labor lasts for more than 24 hours, although there is no evidence of infection at the time treatment is started. It is felt that a word of warning or possibly a definition of the phrase "prophylactic penicillin" should be given. It has been demonstrated repeatedly that if the full benefit from the drug is to be obtained, the *prophylactic* dose should actually be *therapeutic*. Less than 300,000 units every 6 hours or 1,200,000 units in 24 hours will not give full protection. Penicillin is not always used. Multiple antibiotic therapy may be instituted until the causative organism is isolated by culture.

In the proper management of contracted pelvis an absolute necessity for cesarean section is seldom encountered. The best interests of the patient require a trial or a test of labor. It is frequently surprising at the ease with which "problem cases" deliver. With adequate antibiotic protection, labor can be allowed to continue for some time without fear of infection and if progress is not being made, abdominal delivery is quite safe. Indeed, if the bony contraction is in the midpelvis, it is quite possible to apply the forceps and make *gentle* traction. If easy descent does not follow, the forceps are removed and the patient is delivered abdominally without undue risk. This is done with much less damage to her and the baby than would be the case were she to be delivered by a difficult mid-forceps operation. Therefore, while cesarean section is much less hazardous today, the incidence has not appreciably risen. Many patients who previously would have had an elective operation are now allowed a trial or a test of labor which results in an easy delivery from below. The hazard is not increased for the remainder who require operative delivery.

Since nothing in this world of ours is completely good, it appears fitting to conclude with a word of warning. The antibiotics have proved of such value in the prevention and treatment of birth canal infections that since their introduction there has been an unfortunate but definite "let down" in obstetric technique. Too often there seems to exist a feeling of "why be too particular, penicillin will take care of any infection." It must be remembered that some organisms are not susceptible to any of the known antibiotics and in other instances their virility may be so great that irreparable damage is done before these drugs can be used. The most important phase of the treatment of puerperal infection has always been its prevention. This is just as true today as it was in the past.

Louis H. Douglass, M.D.

OBSERVATIONS AND SUGGESTED PROCEDURES IN INVESTIGATIONS OF POISONINGS AND SUSPECTED POISONINGS*†

HENRY C. FREIMUTH, PH.D.‡

The determination of the cause of death (or illness) in a poisoning or suspected poisoning is, at best, a difficult task. Success or failure in arriving at the correct conclusion frequently is dependent upon the cooperative efforts of the attending physician, the pathologist and the toxicologist. In most cases, one of these alone cannot determine the causative agent unaided by the others. The Medical Examiner's Office is primarily interested in establishing the cause of death. In suspected poisonings, this task is sometimes complicated by lack of complete information or by insufficient and improper samples submitted for chemical analysis.

HISTORY

Complete cooperation between the pathologist and the toxicologist is essential if the former hopes to reach the correct conclusion as to the cause of death in a poisoning. Before performing the necropsy, a detailed case history should be obtained in order to furnish as many leads as possible to the toxicologist. Such a case history is usually obtainable from hospital or police records, as well as from the physician who may have attended the deceased prior to death. It is true that in many instances the history will be meager or will prove to be of little value and in such cases the pathologist and the toxicologist must rely upon their own initiative to discover the poison which may have been employed.

The history of the case should include certain essential information if it is to be of any value or assistance to the toxicologist.

1. The occupation of the deceased should always be ascertained in order to rule out any possibility of occupational poisoning.

2. The nature of the food or drink last taken by the deceased should be recorded when such information is available. This may prove important in legal proceedings when the mode of administration of the poison may become a matter of contention by the defense.

3. The time elapsed from the onset of symptoms until death may often assist the toxicologist by narrowing his field of search.

4. A complete description of any treatment administered to the deceased should be included in this history. This encompasses both treatment given as an antidote for the suspected poison as well as any therapy used in some illness immediately prior to death.

5. Symptoms, if any, exhibited before death are frequently useful in indicating a specific poison, although it must be remembered that the effects of poisons are often not characteristic and are difficult to distinguish from the symptoms of disease.

* From the Office of the Medical Examiner, Maryland and the Department of Legal Medicine, University of Maryland School of Medicine.

† Received for publication April 24, 1951.

‡ Associate in Legal Medicine, University of Maryland. Toxicologist, Office of the Medical Examiner, Maryland.

The common symptoms associated with various poisons are listed here for the guidance of the pathologist in cases of suspected poisoning:

(a) Convulsions:

Tonic—Carbon monoxide, cyanides, insulin, strychnine.

Clonic—Atropine, caffeine, ergot, phenol.

Tremor—Alcohol, arsenic, barbiturates, pressor amines, lead, nicotine.

(b) Vomiting:

Aconite, opium derivatives, alcohols, atropine, camphor, carbon disulfide, cyanides, emetine (ipecac), nicotine, phenols, picrotoxin, quinine, salicylates, strychnine, acids, alkalis, arsenic, antimony, copper, mercury, iodine zinc.

(c) Coma:

Alcohols, anesthetics, arsenic, barbiturates, bromides, carbon monoxide, chloral, cyanides, insulin, opium derivatives.

(d) Slow respiration:

Alcohol, anesthetics, barbiturates, carbon monoxide, carbon tetrachloride, cyanides, opium derivatives.

(e) Rapid respiration:

Atropine, cocaine, carbon dioxide.

(f) Dilated pupils:

Belladonna group, cocaine, nicotine.

(g) Contracted pupils:

Opium group, muscarine.

(h) Paralysis:

Cyanides, carbon monoxide, carbon dioxide.

(i) Skin discoloration:

Cyanosis: Acetanilid, nitrobenzene, aniline, cyanides, nitrates, sulfa drugs.

Jaundice: Arsenic, carbon tetrachloride, phosphorus, cinchophen.

Cherry-red coloring; especially in dependent parts of the body: Carbon monoxide.

(j) Delirium:

Alcohol, barbiturates, cocaine, opium derivatives, atropine, lead, mercury.

The above is only a partial listing since space would not permit the inclusion of all possible toxic substances.

THE ROLE OF THE ATTENDING PHYSICIAN

In a case of acute poisoning, usually the first person to see the victim is a physician. Such information as he obtains can be invaluable to the toxicologist. Most of the foregoing information described under "History" can be supplied by the physician who may be either a private practitioner or the doctor in the emergency room at a hospital.

Still more important than the information obtained is the fact that the doctor can often obtain important materials for chemical examination. It should always be assumed, in cases of poisoning, that the patient may die despite all efforts to save him. If this is remembered, the actions of the physician will be governed accordingly. All

vomit should be saved for analysis and if a gastric lavage is performed the first two washings should be preserved for the same purpose. Urine samples (24 hour) and fecal excretions should also be saved for chemical examination. Such efforts are not wasted, since it is well, in any event, to prove or disprove the presence of a poison even though the patient lives.

CLUES AT AUTOPSY

The postmortem examination, in a case of suspected poisoning, can sometimes offer important clues but the findings are rarely conclusive. The corrosive poisons show characteristic changes in the mouth, throat and gastro-intestinal tract but with this exception, no poison produces changes which are not practically identical with changes that may occur in death from disease or other natural causes. For example, extreme muscular rigidity is usually associated with strychnine but ordinary rigor mortis may produce an equal rigidity which, in unusual cases, may persist as long as that caused by strychnine. Dark, fluid blood is found after belladonna and aconite poisoning, but may also be found in persons suffering from uremia and certain infectious diseases. Fatty degeneration of the liver is caused by phosphorus and arsenic but this condition is also found in extreme old age and in certain diseases such as tuberculosis and acute yellow atrophy. Perhaps the most common finding in deaths caused by irritant poisons is redness of the stomach mucosa but this same condition is found as the result of gastritis and the gastro-enteritis of disease.

It must also be pointed out that death from poisoning may be entirely unaccompanied by the so-called characteristic changes associated with certain poisons. A death from strychnine has been recorded in which the usual muscular rigidity was completely lacking. Deaths from other poisons with similar negative findings have likewise been recorded (1).

The postmortem examination in a suspected poisoning is chiefly valuable for two reasons, in addition to permitting the pathologist to secure the necessary organs for chemical analysis. First, the pathologist can determine whether those changes usually produced by a particular poison are present, or are at least compatible with it. Secondly, the pathologist can determine the presence or absence of natural causes of death. In connection with this latter point, however, one should never overlook the possibility that death may have been caused by poison even though the deceased had been suffering from a serious or possibly fatal disease at the time of death.

Notwithstanding the above discussion, certain clues are obtainable at the autopsy and careful observation may frequently save hours of time and work in determining the nature of the poison which may have been responsible for the death. Briefly, these clues may be summarized as follows:

1. Corrosion and burns along the G. I. tract and, externally, about the lips—these may indicate mineral acids, caustic alkalis, oxalic acid, ammonia, bichloride of mercury, fluorides, phenols.
2. Gingival line (darkening) may indicate bismuth, lead, mercury.
3. Jaundice may indicate arsenic, carbon tetrachloride, chloroform, phosphorus.
4. Skin rashes may indicate arsenicals, barbiturates, bromides, aniline derivatives, iodides, mercurials, salicylates, etc.

5. Characteristic odors in the body cavities may indicate chloroform, ether, phenols, cyanides, opium, alcohol, benzene, etc.
6. Luminous particles (in darkness) in the stomach and intestine indicate phosphorus.
7. Colored particles in the stomach—grayish white particles may be arsenic trioxide; blue particles may be copper salts, green particles may be paris green or commercial fluoride preparations.
8. Seeds, leaves, etc., in the stomach contents may indicate some active drug.

SELECTION AND PRESERVATION OF MATERIAL FOR ANALYSIS

The autopsy, in all cases of suspected poisoning, should be complete. It is often erroneously believed that an examination of the gastro-intestinal tract only is sufficient in such cases. This is entirely incorrect, however, since the autopsy is the only means of disclosing the presence or absence of disease as well as the remote effects of the poison. Furthermore, in chronic poisonings, as well as in some acute cases, there is often no indication found in the gastro-intestinal tract (2).

Pursuant to the above belief, it is frequently thought that it is necessary to remove only the stomach and its contents for chemical analysis. This, again, is absolutely incorrect. Insofar as active poisoning is concerned, that portion of the poison remaining in the stomach has had no effect upon the individual and has not been responsible for the death. It is only the poison absorbed by the other organs which can be considered as being fatal. The contents of the stomach are valuable for chemical analysis chiefly in acute poisonings (when death occurs within 4 to 6 hours after ingestion), since a large percentage of the poison in such cases may remain unabsorbed and would thus be present in greatest concentration in the stomach contents. High concentrations of poisons are, of course, easier to detect and identify than are the smaller amounts present in the other organs. However, even in acute cases, none of the poison may be present in the stomach contents since the unabsorbed portion may be lost by vomiting.

It must also be remembered that oral administration is not the only method of inducing the entry of a poison into the body. Poisons may be administered by hypodermic injection or by causing a person to inhale a volatile poison. In such cases, with the exception of morphine, no poison will be found in the gastro-intestinal tract. Furthermore, it is possible for a person to meet his death by some means other than poisoning, and subsequently to have a poison poured down the throat to make the death appear to be a suicide. In such an instance, the poison would be found in the stomach contents but would not have had any effect upon the death of the individual.

The following guide may be used in selecting material for toxicologic examination:

- (1) Brain (at least one-half) to be used for analysis for alcohol, chloroform, ether, alkaloids, barbituric acid derivatives, etc.
- (2) Liver (at least one-half) to be used for analysis for metals (especially arsenic), barbituric acid derivatives, fluorides, oxalic acid, etc.
- (3) Kidneys (at least one) to be used for analysis for metals.
- (4) Blood (at least one ounce) to be used for analysis for gases such as carbon

monoxide. The container should be filled completely and tightly stoppered. Blood is also used for the chemical tests in drownings and in such cases should be obtained from the left and right heart chambers and placed in properly labeled *dry* bottles after having been collected with *dry* utensils. Blood may likewise be used for the detection and determination of barbiturates serving as the most readily available tissue for this purpose (3).

(5) Bone, hair and nails are used for the analysis for lead and arsenic in chronic poisonings. The bone is also used when examining for radium.

(6) Lungs are used for analysis for some gases and to determine whether the poison may have been inhaled.

(7) Urine is used for analysis for barbituric acid derivatives, mercury, lead and arsenic.

(8) Stomach and stomach contents should be obtained in all cases in which death occurs within a relatively short period (few hours) after the onset of symptoms. However, in almost all cases, at least one organ other than the stomach should be submitted in order to prove absorption of the poison. The only exception to this is in cases of death caused by mineral acids or by alkalies, since the stomach and intestinal contents are the only suitable materials for analysis in such cases.

Whenever it is possible, the autopsy should be performed before the body is embalmed since the embalming process interferes with the detection of cyanides, alkaloids and other poisons (4). If the body has been embalmed, however, a sample of the embalming fluid used should be furnished to the toxicologist.

It should not be necessary to point out that meticulous care must be exercised when handling the organs removed from the body. They should not be placed upon any but clean surfaces in order to avoid contamination. Haines (5) cites a case in which an innocent man's life was jeopardized by the discovery of lethal quantities of arsenic in the organs of his wife despite the fact that she had exhibited none of the symptoms of arsenical poisoning. The source of the arsenic was finally traced to a bowl in which the organs had been placed in the mistaken belief that the bowl was clean. It had, in fact, contained small amounts of an arsenical embalming fluid.

The total weight of each of the organs removed for analysis should be recorded and reported to the toxicologist. The portions of the organs to be examined should then be placed in clean glass containers which are provided with glass covers. Preserve jars serve very well for this purpose. Metal and metal covered containers should not be used since they offer a possibility of contamination by foreign metals. Glass jars with metal covers lined with a waxed cardboard liner may be used. It is permissible to use porcelain enamelled containers, if there are no breaks in the enamel. The containers should then be sealed by means of gummed tape or labels placed over the lid and fastened to the container itself. The initials or name of the pathologist should be written on the tape at a point where the seal would normally be broken when the container is opened. A label or tag bearing identifying data (name of deceased, date of death, date of autopsy, etc.) should subsequently be affixed to the container.

A separate container for each sample is to be preferred at all times. However, in rare instances it may be impracticable to obtain the necessary containers. If such a situation prevails, one container may be used for all the samples with the exception

of the gastro-intestinal tract, blood and urine. Each of these latter samples must be kept separate from all the other samples.

It is best not to add any preservative to the samples. Decomposition may be retarded, if not entirely prevented, by keeping the containers properly refrigerated. The so-called "dry ice" used by ice cream dealers will serve quite well for this purpose. As little time as possible should be lost in forwarding the samples to the toxicologist, if the latter has not attended the autopsy. A written record should be kept of the identity of the person acting as messenger. The individual most suited to act in this capacity would be a State or local policeman. Whenever the custody of the samples passes from one person to another, a written receipt should be obtained in order to preserve the chain of custody for possible court identification.

SUMMARY

The procedures to be followed in the investigation of death as a result of suspected poisoning have been outlined and the following points have been discussed: 1. The manner in which ante-mortem leads and clues as disclosed by the history of the case may indicate the suspected poisonous agent. 2. How the observations of the pathologist at the autopsy may serve to identify the poison. 3. The importance of complete chemical analysis in establishing the cause of death. 4. The organs to be used for chemical examination. 5. The preservation of the tissues and the establishment of the *chain of custody* of evidence for legal purposes.

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EXTRAPLEURAL METHYL METHACRYLATE PLOMBAGE IN THE TREATMENT OF APICAL PULMONARY TUBERCULOSIS*

OTTO C. BRANTIGAN, M.D.

The therapeutic management of the patient with pulmonary tuberculosis can be divided into several phases: prophylactic, medical and surgical treatment. The surgical treatment, whether pulmonary resection, cavitory drainage or collapse therapy, is an adjunct or complement to medical management. The more careful and exacting the medical treatment before and after operation, the better will be the end result in the surgically treated patient regardless of the type of surgery employed.

Since the pathologic processes in pulmonary tuberculosis will vary considerably within a single lobe of the lung it is not always possible to select the patient whose disease will respond favorably to collapse treatment. Collapse may be chosen for the major focus of the disease in a lobe and the treatment be entirely successful, only to have a flare-up in a seemingly insignificant area of disease. It does seem evident, however, that certain types of disease, such as extensive caseous areas, tuberculoma, and major bronchial disease causing a giant cavity, destroyed lung, bronchiectasis or atelectasis will not respond favorably to collapse therapy. Exudative tuberculosis, of course, does not require collapse therapy. The tension cavity probably will not respond favorably to collapse therapy but such a statement is highly controversial. Frequently the diseased lung that presents bronchial spasm is not favorably influenced by collapse measures.

The apical region of the lung is the most suitable area for collapse by extrapleural plombage or by thoracoplasty. Phrenic paralysis and pneumoperitoneum are the collapse measures best adapted to the basilar region of the lung. Unimpeded by adhesions extrapleural pneumothorax, of course, is effective in all areas of the lung, whether the apex, base or midlung region. Extrapleural plombage using Lucite spheres will produce as good an apical collapse as any method of collapse therapy that can be employed. Its use below the apex is less satisfactory and even objectionable because of the compression of the major bronchi. Therefore the indication for the use of extrapleural plombage with Lucite spheres is the presence of apical tuberculous disease suitable for collapse therapy.

During the period extending from June 24, 1947 through December 31, 1949 apical extrapleural Lucite sphere plombage operation has been done 122 times on 110 patients. All patients had the benefit of adequate chemotherapy, especially streptomycin, before and after operation. In all but 2 patients the operations were performed under local anesthesia. The posterior approach through the fourth rib bed was used in every operation. In only 2 instances was the operation begun and not carried to a successful termination. In 1 case the operation was abandoned when a cavity was opened. This patient unexpectedly made an uneventful recovery. In another patient the collapse was carried unnecessarily to the diaphragm. The spheres were removed the second day. The pleura was ruptured at operation 10 times on 9 patients. One

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Received for publication February 19, 1951.

CHART NO. 1

	No.	BILATERAL DISEASE						UNILATERAL DISEASE					
		Bilateral Plombage			Unilateral Plombage			Unilateral Plombage			Unknown		
		No.	Neg.	Pos.	Dead	No.	Neg.	Pos.	Dead	No.	Neg.	Pos.	Dead
Negro Patients	Male	7	—	—	1	5	2	2	1	1	1	—	—
	Female	8	1	—	—	2	1	—	1	5	3	1	1
Negro Total	15	2	1	—	1	7	3	2	2	6	4	1	1
			50%		50%		30%	35%	35%		66.6%	16.6%	16.6%
White Patients	Male	36	1	2	—	22	14	7	1	11	9	1	1
	Female	59	7	—	—	29	20	7	2	23	21	—	—
White Total	95	10	8	2	—	51	34	14	3	34	30	1	1
			80%	20%			66.6%	27.4%	5.8%		88.2%	2.9%	2.9%
Grand Total	110	12	9	2	1	58	37	16	5	40	34	2	2
			75%	16.6%	8.3%		63.6%	27.6%	8.6%		85%	5%	5%

patient had bilateral plombage and the pleura was ruptured at both operations. In no instance did this accident prevent a successful completion of the operation.

The patients have been followed up to July 31, 1950, thus permitting a follow-up of 7 to 37 months. The follow-up on the series previously reported (1, 2) has been brought up to date and 32 patients have been added. There were 95 white and 15 negro patients. Of these there were 7 negro males and 8 negro females, 36 white males and 59 white females. The oldest was 65 years old and the youngest 16 years of age. In 17 patients the contralateral lung was under collapse therapy at the time of the plombage operation. Thoracoplasty was the collapse in 5 cases and pneumothorax in 12 instances. The patients were all in good physical condition and were suitable surgical risks. However, according to the extent and type of disease some were not considered ideal for collapse therapy, especially extrapleural plombage with Lucite spheres. Except for 2 patients the follow-up is complete. These were lost at 12 and 15 months respectively; one was considered to have arrested disease at that time and the other was still sick from disease in the contralateral lung.

The patients were referred from many sources, including various sanatoriums and private physicians. In the follow-up the presence or absence of tubercle bacilli was usually determined by repeated direct smear of the sputum, but in many it was determined by culture of the sputum or fasting gastric contents. Of the group 20 or 18.2 per cent have positive sputum and 80 or 72.7 per cent have negative sputum. Of the 20 with positive sputum 5 are among the 32 patients most recently added to the series. Eight or 7.3 per cent of the patients are deceased. Of the 12 patients with bilateral plombage 9 have negative sputum and 1 is dead. It is difficult to determine the presence or absence of a cavity under the Lucite spheres but only 2 have been proved to have a cavity in the area collapsed and both have positive sputum. There are no demonstrable open cavities in the group of patients with sputum or gastric contents negative for tubercle bacilli. Of the 20 who have positive sputum, disease is present in the opposite lung of 9 patients and in no instance is it a spread of disease following operation. In the series there are 40 patients without roentgenographic evidence of disease in the opposite lung at the time of surgery. In this group with unilateral disease 35 or 87.5 per cent have negative sputum and 2 or 5 per cent have positive sputum.

In the entire group of patients 8 or 7.3 per cent are dead. There was one operative death which occurred 3 days postoperatively from a profound spread of disease in both lungs. There were no other operative deaths. The other deaths occurred from 3 to 28 months after operation. In 3 patients death was caused by progression of the tuberculous disease in the opposite lung. There was 1 fatality from each of the following causes:

Death from progression of disease in the lung on the operated side.

Death 36 hours after resection of the upper and middle lobes of the right lung and decortication of the lower lobe of the right lung contralateral to successful Lucite ball plombage.

Death from a flare-up of tuberculous meningitis, diagnosed and treated before plombage which was successful.

Death from an unknown cause but undoubtedly from tuberculosis.

Since there is a distinct difference in the prognosis of pulmonary tuberculosis in the negro and white races it is important to give the results in these 2 groups of patients. In the series of 110 patients 95 were white and 15 were negroes. In the negro group 2 or 13.3 per cent have positive sputum and 9 or 60 per cent have negative sputum, 4 or 26.6 per cent are dead. Among the negro patients the deaths from pulmonary tuberculosis after the plombage operation make up 50 per cent of all the fatalities. In the negro patients with unilateral pulmonary tuberculosis 5 or 83.3 per cent have negative sputum after operation.

The other complications have been of a minor character. The early postoperative complications consisted of 8 patients who developed pneumothorax on the operated side, either spontaneous or from needle puncture of the lung while the anesthetic was being injected. In 1 of these patients closed drainage by tube suction was instituted with an uneventful recovery. Hemorrhage occurred in 5 patients and shock was observed in 2 instances. The following postoperative complications occurred one time only: vocal cord paralysis, auricular fibrillation, drug reaction, phlebothrombosis and elevated nonprotein nitrogen level. All patients had fluid in the extrapleural space postoperatively and in every instance the fluid was absorbed spontaneously except those which were complicated by hemorrhage and required aspiration. There have been no other early complications and no wound or extrapleural space infections, either pyogenic or tuberculous.

The late complications have been minimal. Four patients developed a flare-up of pre-existing disease below the area of collapse. There have been no instances of spread of disease to the opposite lung. Two patients who maintained a persistently positive sputum developed fluid in the extrapleural space 14 and 22 months after operation. In 1 the Lucite spheres were removed promptly and easily under general anesthesia. The fluid was clear and did not contain tubercle bacilli by concentrated smear or by culture. Because of a complete thoracoplasty on the right, a left thoracoplasty was not done after removal of the spheres. She died from a pulmonary hemorrhage about ten days later. The other patient developed fluid but removal of the spheres was delayed. This fluid contained tubercle bacilli and is reported to have assumed the character of pus when the spheres were removed and a thoracoplasty performed. No other late complications have developed. There has been no migration of the Lucite spheres.

Friedman (3) and others have expressed the same belief as Alarcon (4) who writes: "While other technics of collapse have enjoyed an enormous popularity the historical indifference which has been manifest over a relatively long period of time toward extrapleural pneumothorax is not well supported by experience." Extrapleural plombage with Lucite spheres should give better end results than extrapleural pneumothorax because the collapse is adequately maintained, and there should be fewer complications since repeated needle puncture is avoided and the space is protected by a firm thin layer of dense fibrous tissue. Extrapleural plombage with Lucite spheres has been adequately supported by Dolley (5), Brewer (6), Abbott (7), and others. Opponents of extrapleural plombage with Lucite spheres were led by Trent (8) and followed closely by Walkup and Murphy (9). In his description of 51 patients with Lucite sphere plombage, Trent reported that 39.3 per cent suffered early complica-

tions and 31.3 per cent had late complications. Only 19.6 per cent were improved and 35.3 per cent were dead. Murphy, in collaboration with Walkup, writes: "We know of no operation in thoracic surgery that offers so wide a variety of complications, both early and late, as does extrapleural pneumonolysis with plombage." Migration of the Lucite spheres has been described, some instances resulting in death of the patient. Giever (10) reported a fatal case of asphyxia arising from migration of a Lucite sphere into the trachea. He showed that migration was the result of infection. If infection occurs about the Lucite spheres one should not wait for migration. The application of simple basic surgical principles demands prompt removal of the (foreign body) spheres.

Careful selection of patients, adequate pre- and postoperative treatment, effectual use of available chemotherapeutic and antibiotic agents, meticulous aseptic operative technic, the use of local anesthesia and the posterior approach at operation in the present series have practically eliminated all important early and late postoperative complications. Therefore, a study has been made in an endeavor to produce the best possible recovery rate from the treatment of pulmonary tuberculosis by extrapleural plombage.

The collapse produced by Lucite sphere plombage cannot possibly be of the same type as the uniform, symmetrical concentric collapse of an ideal pneumothorax unimpeded by adhesions. However, Lucite sphere plombage can be carried out so as to simulate the collapse produced by the modern standard thoracoplasty. The endeavor in this series is to produce the thoracoplasty type of collapse. The method of freeing the lung from the mediastinum was abandoned since the results with the Simbs apicolysis were unsatisfactory. In the procedure advocated here, the pleura is stripped to the internal mammary artery anteriorly and always to the third rib in front. This produces a more uniform collapse over the upper lobe of the lung. Posteriorly it is stripped medially beyond the sympathetic trunk. If stripped in this manner it simulates the thoracoplasty collapse. Alexander (11) reported that a thoracoplasty of fewer than 5 ribs could not be counted upon to completely close a pulmonary cavity. In following this thought the object is to produce by plombage a collapse that will be as extensive as one produced by standard thoracoplasty for the same type of lesion. This often results in a more extensive collapse than would be produced if one thought only about collapsing the tuberculous lesion. In spite of increasing the amount of collapse the cardiorespiratory function is clinically less impaired than by a thoracoplasty of the same extent, as was admirably shown by Gaensler and Strieder (12). If the pulmonary tuberculous lesion is in the apical region and is of the type suitable for treatment by collapse therapy a good end result should be produced if the extent of the Lucite plombage is sufficient to collapse the diseased area.

The patient with a major focus of disease on 1 side and a minor one on the other will readily accept plombage collapse for the major focus. Sometimes the sputum of such a patient cannot be converted to negative because of the untreated minor side. The disposition in this situation is often a serious problem. Usually the patient is free of symptoms and therefore will not permit additional surgery or even medical treatment. The internist finds it difficult to urge surgery when the patient is free of symptoms. One patient in this series had arrested disease on the left side treated by

plombage and was symptom free. The opposite side, formerly treated by pneumothorax, was the site of persistent disease and positive sputum in the upper and middle lobes. She died following lobectomy of the upper and middle lobes of the right lung and decortication of the lower lobe of the right lung. If the patient has persistent disease in the contralateral side from plombage and the symptoms continue, treatment of the contralateral lung is, of course, readily recommended and accepted.

When positive sputum persists in the patient with unilateral pulmonary tuberculosis treated by extrapleural plombage with Lucite spheres, the question of further treatment presents serious problems. In considering additional surgery or medical treatment, there is doubt in the mind of both the clinician and patient when the exact source of the positive sputum cannot be demonstrated. If the symptoms persist and the location of the disease can be determined, it is less difficult to convince the patient and clinician that some other type of surgical treatment is necessary.

Theoretically it appears that the late infection about the spheres will not occur if the parenchymal disease is healed. With unhealed collapsed parenchymal disease infection may occur about the Lucite spheres at any time after operation, even years after the original procedure. In order to prevent late complications as well as to bring about arrest of pulmonary tuberculosis, it seems obvious that patients who present persistent disease under the Lucite spheres should be encouraged to accept further treatment. In the present series the author has had the opportunity of treating only 2 such patients. In 1 instance the spheres were removed and a lobectomy accomplished with ease at a single operation. Later the patient had a single stage thoracoplasty to prevent overdistention of the lower lobe. She now has arrested disease. In the second patient resection did not seem indicated because of the infiltration type of disease in the opposite lung. A relaxing thoracoplasty was done without removing the Lucite spheres. The patient still has positive sputum but is asymptomatic. Ultimate healing is expected. Removal of the Lucite spheres followed by a standard thoracoplasty may be indicated, especially where there is a flare up or spread of disease below the Lucite spheres. The author has not had the opportunity of carrying out such a procedure.

CONCLUSIONS

1. From June, 1947 to December, 1949 the extrapleural Lucite sphere plombage operation was performed 122 times on 110 patients. There were 95 white and 15 negro patients.

2. A follow-up of 7 to 37 months reveals that 80 patients or 72.7 per cent have negative sputum, 20 patients or 18.2 per cent have positive sputum, and 8 patients or 7.3 per cent are dead. Of 40 patients with unilateral disease preoperatively 87.5 per cent have negative sputum.

3. The satisfactory early end result and the absence of early or late major complications indicate that the procedure is worthy of continued use. It is evident that the follow-up period must extend over many years before the procedure can be evaluated adequately.

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NON-TRAUMATIC PERFORATIONS OF THE ESOPHAGUS AND PARTIAL THORACIC STOMACH*†

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In the course of infectious granulomatous diseases of the thorax, esophageal erosion and perforation may appear. Tuberculosis of the esophagus sometimes follows spinal, pharyngeal, and mediastinal lymph node involvement (1). Spontaneous rupture of the esophagus has reportedly complicated the course of syphilis (2). Fourteen per cent of esophageal peptic ulcers rupture (3). Erosive damage to the esophagus in mediastinal and pulmonary malignancies and aneurysms is often observed. Perforation of the esophagus in the latter days of chronic illness in which acute ulcerative esophagitis makes its appearance is often overlooked during clinical study and misinterpreted as a traumatic or postmortem lesion at autopsy. It is largely to this acute condition that attention is drawn in this paper.

Acute ulcerative esophagitis (esophagomalacia) was found in 1.3 per cent of 6000 autopsy specimens studied by Bartel (4). In each case, dilation of the lower third of the esophagus was noted. Regurgitation of gastric contents had occurred through the gastro-esophageal junction. Extreme atrophy, almost to the point of transparency, was a constant finding. The mucosal aspects of the specimens studied were disfigured by longitudinal ulcerations, pseudomembrane formation, discrete and coalescent petechiae and bile and blood pigmentation. Perforation with mediastinal involvement appeared in 3.6 per cent of Bartel's cases.

Auto digestion by regurgitated gastric juice during the agonal phase of a long-standing, debilitating disease has been considered a cause of esophagomalacia. Such digestion and ulceration is to be suspected in congenital or acquired shortening of the esophagus with partial thoracic stomach and the sliding type of esophageal hiatal hernia. Olsen and Harrington (5) observed hypotonia of the cardia and free flow of gastric contents into the supradiaphragmatic portion of the stomach and lower end of the esophagus. It was said that 68 per cent of the thoracic stomachs were ulcerated. Pearce (6), after finding intranuclear inclusion bodies in acute terminal ulcerations of the esophagus suggested that a virus may be the cause. Two of the 4 cases that he reported had endured chronic ulcerative colitis. Circulatory stagnation and agonal thrombosis in esophageal vessels may be a predisposing cause. Recently, Wyatt and Khoo (7), in consideration of the neurogenic theory of gastric ulcer formation postulated by Cushing, reported two cases of perforated acute esophageal ulcers. Bartel, in his series, too, noted a relationship between brain injury and esophageal erosions. Culver and Clark (8) fostered the idea that normal esophaguses can be ruptured by the forces of retching, coughing, and vomiting. Forceful ruptures of this type are reportedly near the level of the diaphragm. Inferentially, one must consider a relationship between perforation of allegedly normal esophaguses and those which have been weakened beforehand by esophagomalacia. Fishberg, parallel-

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† Aided by a grant from the Sidney M. Cone Research Fund.

Received for publication August 15, 1950.

ing the line followed by Mallory and Weiss (10) eighteen years before, indicated vomiting as the inciting cause of perforation. Cerebral lesions and alcoholism were mentioned by him as predisposing causes.

Although acute ulcerative esophagitis is often contemplated as a terminal or post mortem development, it undoubtedly appears earlier in the course of sundry ailments and results in various signs and symptoms of a perplexing nature. Bartel (4) related the experience of a patient who developed dysphagia so severe and unrelenting that a diagnosis of esophageal carcinoma was made.

Substernal pain, vomiting, with and without hematemesis, and melena are associated with acute ulcerative esophagitis. Fishberg (9) states that his case simulated myocardial infarction. Culver and Clark (8) suggest rapidly developing, unheralded hydropneumothorax with mediastinal and cervical interstitial emphysema as signs of esophageal perforation. Kinsella, Morse, and Hertzog (11) who are credited with a careful survey of the literature, discuss, at length, signs and symptoms of perforated esophagus. Roentgen ray identification of mediastinal emphysema, mediastinal fluid level, and identification of iodized oil in the mediastinum outside the esophagus are indicative of esophageal rupture. If the pleural membrane has been ruptured, aspiration of the chest may recover reflux chyme or an identifiable swallowed substance such as grape juice.

Less than 25 per cent of the reported cases of ruptured esophaguses have been diagnosed before death. More common consideration of this catastrophe and the employment of the above diagnostic procedures should lead to more frequent recognition.

Although one is inclined to assume defeat when confronted with the problem of rupture of the supradiaphragmatic portion of the gastrointestinal tract, the experiences of Kinsella et al. (11), Clagett (12), and Lynch (13) encourage the use of present day surgical techniques and medical armamentaria in combating this cause of death.

CASE REPORTS

Case I

C. G., 24636, 5709A: This patient, a 15 year old colored female, was admitted because of a complaint of "yellow eyes" that had persisted for 5 days. Two weeks before admission the patient had had a "sore throat."

The history of the patient's estrus was quite normal except for an interruption by pregnancy which was of sixteen weeks standing when the jaundice appeared. There had been no attempts at abortion. There was no history of venereal disease. Transfusions, exposure to jaundiced individuals, or being abroad were not reported.

At the time of admission the temperature was found to be 98.6 F; the pulse rate was 18 per minute; and the systolic blood pressure, 105 mm. of mercury and the diastolic, 50 mm. of mercury.

Examination discerned jaundiced skin and mucous membranes. There was fresh blood in each nostril. The liver edge was palpated 3 cm. below the costal margin. Percussion over the liver elicited pain. The spleen was not palpable. External hemorrhoids and findings consistent with the sixteenth week of gestation were observed.

Studies of the blood determined the hemoglobin concentration to be 60 per cent (8.7 gm.); the red blood cell count, 3.36 millions per cubic mm. and the leucocyte count, 3,050 per cubic mm. Of the white blood cells, 48 per cent were lymphocytes. One fourth of the lymphocytes were atypical. Three mg. of urea nitrogen existed in each 100 cc. of blood. The blood sugar level was 84 mg. per hundred cc.; direct bilirubin was 19.2 and indirect bilirubin, 14.2; alkaline phosphatase was 6.8 Bodansky units; thymol turbidity, 3.8 units; and serum albumin, 3.42 gm. per 100 cc. and globulin, 2.62 gm. per 100 cc. A prothrombin time determined with the patient's blood was 33 seconds. The control was 14 seconds.

During the patient's stay in the hospital, direct bilirubin concentrations rose to 36.2 mg. per hundred cc. of serum and indirect bilirubin rose to 34.9 mg. per 100 cc. of serum. The prothrombin time increased to 60 seconds. On the twenty-sixth day in the hospital, amino acids concentration was shown to be 13.7 mg. per hundred cc. of blood.

Lethargy and delirium appeared on the seventeenth day of hospitalization. The liver was no longer palpable. On the twenty-fifth day in the hospital abortion occurred. At this time 500 cc. of blood were discharged through the vagina. Twenty-seven days after admission 500 cc. of "coffee ground" matter were vomited. Three days later death occurred.

At autopsy, biliary staining of all tissues was noted throughout the body. An emission of bloody, frothy fluid occurred from the nose and mouth. Axillary lymph nodes were removed. On microscopic examination these proved to be reactive but not characteristic of a specific infection. Peripheral edema was conspicuous in the arms and legs.

After opening the body, the liver was found to be of reduced size. Both lungs were edematous and congested. Foci of hemorrhage existed in the parenchyma. Microscopic examination showed localized granulocytic infiltrates.

Examination of the pelvis and its contents revealed evidence of a post abortive state.

The liver weighed 850 grams. The hepatic capsule was delicate and transparent. The parenchyma was soft and friable. Many areas which protruded from the surface were somewhat darker than prepared mustard. Streaks of engorged sinusoids were seen in these areas. Coalescent and discrete zones of this type ranged in size from 1 to 10 cm. The remainder of the liver was deep red. The normal lobulations were vaguely outlined in a section of this organ. The portal areas were fibrotic and infiltrated by lymphocytes. Extreme biliary duct hyperplasia was noted. There was no evidence of neoplasia. Necrosis of the hepatic cells existed through most of the lobules. Little normal tissue was seen. The necrotic tissue was discolored by bile pigment.

The duodenum displayed two recent, superficial, hemorrhagic erosions in the mucosa that measured 3 mm. in diameter. Bleeding points could not be demonstrated. In the esophagus (Fig. 1) at the level of the bifurcation of the trachea, a ragged perforation was noted that measured 3 cm. in diameter. Blood and regurgitated gastric contents had extended into the adventitial areolar tissues that surrounded the perforation. A smaller, similar perforation measuring 2 cm. in diameter

was seen 1 cm. above. There was no obstruction to the esophagus, nor was there any foreign material found in the region of the perforation.

There were no noteworthy lesions in the brain.

The diagnosis was epidemic hepatitis; jaundice; perforation of the esophagus; pulmonary congestion and edema; and cerebral congestion and edema.

Case II

J. H., 22103, 5629A: This patient, a 62 year old white female, was admitted to the University Hospital with a complaint of black bowel movements and weakness. Two months prior to admission, she had epigastric discomfort which she relieved by eating oatmeal and milk. Fried, fat foods aggravated the pain. In her opinion, the



FIG. 1. View of esophagus showing perforation at mid portion of specimen

symptoms were caused by nervousness and anxiety for an invalid mother who was in her care. Two days before coming to the hospital, she took an enema. Following discharge of the enema she suffered a spell of weakness and syncope, and at the same time vomited "coffee-ground" material. The next day, against the advice of her physician, she arose and continued her duties in the home. The day before admission, she passed a black stool. Weakness was more pronounced following this incident so she appeared at the hospital for treatment.

A physical examination after admission was without fruition. The systolic blood pressure was 140 mm. of mercury and the diastolic 80. The minute pulse and respiratory rates were 120 and 20. The blood hemoglobin concentration was 56 per cent (8.2 gm.). The urea nitrogen was 42 mg. in each 100 cc. of blood. The plasma chlorides amounted to 337 mg. per cent. Serum albumin and globulin were determined to be 3.60 gm. and 1.76 gm. per cent. The prothrombin time was slightly extended.

On the basis of a diagnosis of bleeding peptic ulcer, the patient underwent a laparotomy after 4 days in the hospital. Failing to find evidence of gastric or duodenal ulceration, esophageal varices were suspected as the source of bleeding. At the lower end of the esophagus a defect was found in the diaphragm into which a pouch of stomach protruded. A pack was inserted into the hiatus to compress the esophagus against the eleventh and twelfth thoracic vertebrae. A gastrostomy was also performed.

After operation there were no longer signs of bleeding into the gastrointestinal tract. Treatment in the form of blood transfusions, plasma, and glucose was administered. On the second post-operative day she appeared to suffer respiratory distress. Roentgenologic studies of the chest demonstrated shadows that could be interpreted as atelectasis or pneumonia and free fluid in the bases of both hemithoraces. The

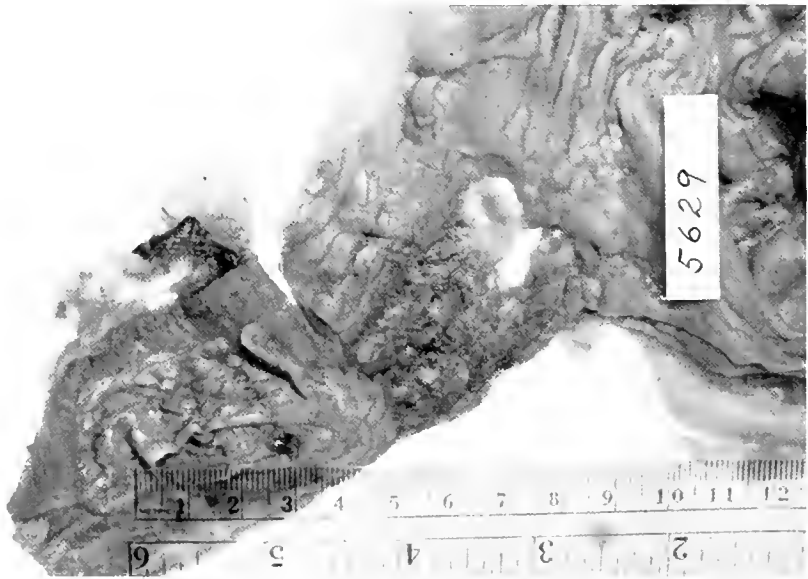


FIG. 2. View of esophagus showing perforation at lower end

tracheo-bronchial tree was explored via bronchoscope for obstructing mucous plugs. Serosanguineous fluid was aspirated from the pleural cavities. The patient's temperature throughout the post-operative period varied from 100 to 105 F. Nine days after operation a wound abscess was drained of foul pus. Coma ensued on the seventeenth post-operative day at which time she died.

Five hours after death an autopsy was performed. The body was well developed and obese. The operative incision was infected. Omentum and viscera underlying the incision were bound together by fibrinopurulent exudate. The left hemithorax contained about 300 cc. of bloody fluid which contained coagula of fibrin. The right hemithorax contained 100 cc. of bloody fluid. Both lungs were congested and edematous. Bloody fluid filled the bronchi. There was no consolidation but atelectasis was seen in both lungs. In the stomach, a securely sutured, transverse incision on

the anterior aspect of the cardiac portion was noticed. A gastrostomy wound was seen on the anterior surface opposite the incisura angularis. The mucosa of the stomach and duodenum was speckled by petechiae but was free of ulceration. A pouch of stomach protruded in the region of the cardia. This portion was thinner than normal. There was no ulceration or perforation. The esophagus (Fig. 2) from the cardia to a point 7 cm. above showed erosion, discoloration and atrophy. Two perforations were shown in this segment of the esophagus that led into hemorrhagic periesophageal tissues. Extreme edema and interstitial hemorrhage in the subepithelial connective tissue, muscularis, and adventitia of the esophagus were noted.

Although one might suspect that the esophageal atrophy and perforation could have resulted from the pressure of the hemastatic pack, no less consideration must be given to the hiatal herniation as a predisposing cause of ulceration, esophagomalacia, and perforation. Weight is given to this consideration because varices were absent from the preserved portions of the esophagus.

The final diagnosis was hiatal hernia; acute esophagitis; perforation, esophagus, lower third; surgical defect, stomach, abdominal wall; abdominal incision, infected; purulent peritonitis, epigastric, localized; hydro-hemato-thorax, bilateral; and incidental minutiae.

Case III

M. M., 37060, 3448A: Three days before admission, this 2½ year old colored male child suffered fever and vomiting. Intermittent convulsions occurred on the evening of admission. The child appeared alarmingly ill. Rhonchi in the chest were heard. A healing eczematoid rash was present on the legs. The red blood cell count was 3.33 millions per cubic mm. Of the 24,500 leucocytes in each cubic mm. of blood, 82 per cent were granulocytes. Albumin was present in the urine. The spinal fluid contained 27 lymphocytes per cubic mm. The Pandy test for globulin was 1+. During a short period of hospitalization, the patient's temperature rose to 107.2 F. The pulse and respiratory rates increased accordingly.

Oxygen, phenobarbital, and paraldehyde were administered to arrest the convulsions. The seizures persisted nevertheless, and the patient died within 24 hours after admission.

Three hours after death, an autopsy examination revealed mild but generalized lymphadenopathy, a few scattered petechiae of the serous and mucous membranes, and pulmonary congestion and edema. One hundred cc. of blood-tinged fluid were found in the left pleural cavity. The thymus gland extended from the thyroid cartilage to well below the second intercostal space. The esophagus exhibited a rent 1 cm. in diameter, 1.5 cm. above the cardiac junction. The esophageal tissues around the defect had a "digested appearance." Microscopic study of the lower end of the esophagus showed an area of ulceration in the squamous epithelium. The submucous tissues were edematous. The fibers of the muscle and fibrous tissue were widely separated. There was no cellular evidence of acute or chronic inflammation. The mediastinal contents around the perforations were necrotic.

A blood lead concentration determined under controlled conditions was .5 mg. per hundred cubic centimeters. The brain was considered normal.

The diagnosis was lead poisoning; spontaneous perforation, esophagus; acute mediastinitis; and hemothorax, left.

SUMMARY

1. Acute ulcerative esophagitis (esophagomalacia) and other causes of perforation of thoracic portions of the gastrointestinal tract are discussed.
2. Etiologic factors in esophagomalacia are considered.
3. Symptomatology and aids to diagnosis of ruptured esophaguses and thoracic stomachs are reviewed.
4. Three cases of perforated esophagus are reported.

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ACUTE PANCREATITIS; REVIEW OF 30 CASES

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Diseases of the pancreas were almost unknown until 1889, when Fitz defined, described, and classified acute pancreatitis (1). The term *acute pancreatitis* is here defined as a primary inflammation of the pancreas some times associated with biliary disease, but not the type secondary to such systemic conditions as mumps, diabetes, arterial sclerosis, nephritis or trauma.

There are three distinct periods in the history of acute pancreatitis.

1. Before 1900, all cases were observed at autopsy. There was one type of disease recognized which we now call acute pancreatic necrosis or hemorrhagic pancreatitis.

2. The second period was in the early part of 1900 when the disease was encountered during surgery, often performed without a definite diagnosis. The mortality was around 50 per cent and as time went on a trend toward more conservative treatment developed.

3. The third or medical period began around 1930 and represented a reaction to the high mortality which commonly followed surgery.

The anatomy of the pancreas (2) is important because of its relations and its retroperitoneal position, lying at the level of the first lumbar vertebrae. The head is surrounded by the duodenum, the lesser sac and celiac axis to the left and above the superior mesenteric artery below. The tail is in relation to the splenic artery and the hilum of the spleen. The veins draining the pancreas are part of the portal system passing into the liver. The main duct (duct of Wirsung), drains the entire pancreas and empties into the duodenum in relation to the common bile duct. The accessory duct of the head (duct of Santorini), usually has an independent opening, into the duodenum.

The nerve supply from the splanchnic plexus consists of secretory fibers from the vagus and vaso motor fibers from the sympathetic trunk. Stimulation of the vagus nerve yields a thick fluid rich in enzymes. This action is blocked by atropine. Further secretion also is evoked by the presence of acid gastric chyme in the duodenum, by the secretion pancreozymin mechanism.

The chief enzymes are trypsin, lipase, and amylase. Trypsin is activated by hydrochloric acid, bile, or calcium salts, and splits protein into peptones and peptones into amino acids. Lipase splits the fat into fatty acids and glycerine, aided in the emulsification by bile salts. Amylase splits starch and all of its sugars.

The morbid anatomy characteristic of pancreatitis is in the development of a diffuse glassy edema of a swollen indurated gland, or a hemorrhagic necrosis followed by an abscess formation in more severe grades. The degree of the trypsin activity determines whether the gland would show edema or hemorrhagic necrosis (2).

In current text books, there is a great deal of speculation and a striking lack of agreement regarding the etiology and pathogenesis of acute pancreatic necrosis. Per-

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Received for publication November 5, 1951.

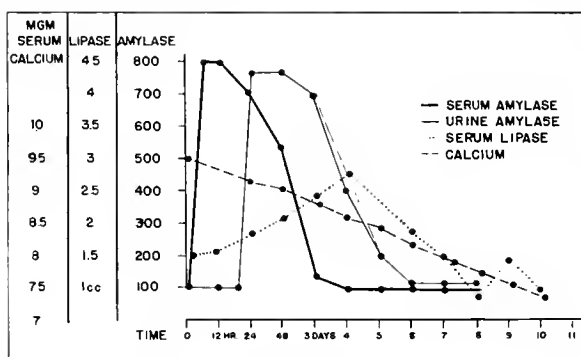
haps the only tenable concept concerning the pathogenesis is that all grades of acute inflammation of the pancreas with or without massive necrosis are but manifestations of the same basic processes merely representing varying degrees of inflammatory response to the insulting agent. Acute pancreatitis is far more common than is usually believed; the failure to recognize this frequency of acute pancreatitis results, no doubt, from the fact that most of the cases are of the milder variety referred to as interstitial pancreatitis. The more severe variety of pancreatitis known as acute hemorrhagic pancreatitis is rare.

Excluding hemorrhage into the pancreas resulting from primary arterial disease, most authors agree in assigning the origin of hemorrhagic pancreatitis to a cause extraneous to the pancreas itself, but beyond this point opinions differ (10).

Some of the possible etiologic causes are here listed. (See table 2)

1. Infectious theories.

- a. Infection is induced by the retrograde flow of duodenal juices into the pancreatic ducts thus activating the ferments of the pancreatic secretions.



Graph—showing the curve of Amylase, lipase, urinary amylase, and serum calcium

- b. The pancreas becomes infected through lymph channels from a diseased gallbladder or by way of the blood stream from a more distant foci (10).

2. Non-infectious theories. The most popular is the common channel theory. This theory presupposes first mechanical stasis blocking the ducts at the sphincter of Oddi, and second, the chemical autolysis of bile, duodenal contents, or degenerated duct contents. Although associated biliary disease is a concomitant finding in the majority of cases, those without apparent cholecystitis must be explained. In these, toxic products may develop within the pancreas or may be regurgitated from the biliary tract or duodenum into the pancreatic ducts, but no good explanation is offered for the occurrence of pancreatitis in persons in which the ducts open separately into the duodenum.

Another theory (3) is the obstruction of the pancreatic ducts thus causing the secretions to back up and cause the ductules and acini to rupture. Inactive pancreatic juices, however, are harmless. Section of the ducts with escape of inactive juices into the peritoneal cavity produces neither pancreatic involvement nor clinical symptoms. Experimental ligation of the pancreatic duct produces no necrosis. If, however,

ligation is effected at the height of digestion pancreatic necrosis ensues. It has been shown (5) that temporary occlusion of the pancreatic artery which otherwise has no effect on the pancreas will cause necrosis of the glandular tissue in the presence of edema of the pancreas. It seems that decrease in cell resistance caused by this temporary interruption of the blood supply is providing the additional factor necessary for destructive action of trypsin on the pancreatic tissue.

What part does bile play in this disease? For many years, bile has been recognized as a factor in the production of acute pancreatitis. Experiments proved that bile did not activate the enzymes (3). Others believed that bile merely accelerates the action of the pancreatic ferments. It has been demonstrated that injections of bile into the duct of Wirsung produces acute pancreatitis if done at the height of digestion and if injected under force. If the bile was sterile, very little reaction was produced, but infected bile was more potent. The offending substance was found to be sodium Taurocholate and is found in abundance in infected bile (3).

The most accepted theory today is that at the height of digestion, the pancreatic duct somehow becomes occluded, thus the pancreatic secretions cannot escape so they back up and, as a result of this back pressure, the ductules and acini rupture. The process leads to swelling and edema of the gland which may cause a temporary occlusion of the pancreatic artery thus adding the factor necessary for the destructive action of trypsin on the pancreatic tissue.

Despite the real progress that has been made in the basic understanding of acute pancreatitis, it remains a disease of unknown etiology.

Pancreatic symptomatology (3) in its acute manifestations depends on the activation of trypsinogen into trypsin. Protein digestion by this liberated enzyme may affect blood vessels, lymph structures, or pancreatic cells. The circulation of foreign protein in the form of incomplete protein digestion products, may in part seem to explain the severe toxic aspects of the condition. Some believe the significant products of proteolysis to be histamine, produced in the necrotic tissue or in the peritoneal fluid.

Therefore, symptoms of acute pancreatitis are caused, first by local pancreatic irritation and second by the circulation of toxic products.

SIGNS AND SYMPTOMS

The classical description of acute pancreatitis (4) was based upon a study of the fulminating type of the disease, and as a result, doctors would hesitate to make the diagnosis of acute pancreatitis unless the patient presented evidence of cyanosis and shock. Nowadays, the common form of the disease is mild and one rarely sees the fulminating type with clinical shock.

The outstanding symptoms are here listed (see table 3 for BCH series).

1. Constant severe upper abdominal pain, frequently extending to the back and the left flank, aggravated by the ingestion of food and water. Pain is unresponsive to the usual dosages of opiates.

2. Nausea and repeated and prolonged vomiting. In some cases, the vomiting persists after the pain has subsided. Often times, the complications of prolonged vomiting cause more difficulties than the pancreatitis.

3. Obstipation and progressive abdominal distension is a common symptom.

4. Diarrhea, when it occurs is usually a late manifestation indicating considerable pancreatic destruction.

The early physical signs of acute pancreatitis are less dramatic than the symptoms and this feature is exceedingly helpful in making the diagnosis.

1. Frequently, there is only moderate tenderness over the upper abdomen. As the disease progresses, the tenderness becomes more diffuse and more pronounced.

2. Abdominal distension is not an early sign. An insidious progressive ileus is characteristic of acute pancreatitis if the pathologic process is severe. This usually occurs on the third day.

A silent abdomen offers a marked contrast to the abdominal findings in mechanical obstruction.

4. Cullen's and Gray-Turner's Sign (4). Cullen described the discoloration of the para umbilical area, and discoloration of the skin overlying the flank was described by Gray and Turner. These signs result from an extra-peritoneal extravasation of blood and not to intra-peritoneal hemorrhage. The discoloration in the flank is accompanied by palpable edema and induration. This is usually seen on the third or fourth day. The above signs occur in approximately 10 per cent of the cases.

5. Shock is relatively uncommon in cases of acute pancreatitis and may be absent even in the presence of widespread pancreatic destruction (see table 4). Pre-clinical shock as manifested by hemoconcentration and diminished blood volume is quite common in the severe forms of the disease.

6. Jaundice of mild to moderate degree occurs in some cases either from compression of the common bile duct by edema of the adjacent portions of the pancreas or from secondary hepatitis. Only 5 of the 30 patients in the Baltimore City Hospital series had clinical jaundice (see table 3).

7. A palpable mass will frequently appear on about the seventh day.

The diagnosis of the disease still remains the difficult problem (see table 5). Since acute pancreatitis follows no consistent symptom pattern, the first prerequisite is to think of the possibility, especially whenever the patient complains of abdominal pain in the mid or upper abdomen. The above signs and symptoms fall into five main groups and simulate five other pathologic conditions, that have to be ruled out (6).

1. The first group follows the typical text book description. An elderly, obese, florid individual, who has eaten a large meal preceded by several highballs. A few hours later, he is seized with severe upper abdominal pain followed immediately by nausea and vomiting. Generally, he is in profound shock with cyanotic mottled skin and diffuse abdominal rigidity and tenderness. Peristalsis is infrequent or absent. Later he may have ecchymosis of the flanks or umbilicus. Death ensues in 24 to 36 hours. The patient who simulates acute coronary occlusion is included in this group.

2. The second group simulates acute cholecystitis. The onset is usually sudden with moderately severe epigastric or right quadrant pain. The pain often radiates through to the back and is followed by nausea and vomiting. These patients usually have experienced similar attacks in the past.

3. Group three imitates mechanical small intestinal obstruction, with no demonstrable etiology.

4. Group four resembles acute alcoholism with acute gastritis. Included in this group are those thought to have a perforated peptic ulcer. They enter drunk or shortly after a recent prolonged alcoholic spree. They usually have only a slight degree of abdominal rigidity.

5. Group five comprises those patients who on admission to the hospital have a mass either in the epigastrium or the left upper quadrant. They had acute pancreatitis 3 to 4 weeks prior to admission.

Previous gastro-intestinal disorders are of considerable significance, and often times, there is a history of alimentary disturbances for 3 to 4 weeks prior to hospital admission (see table 6 of Baltimore City Hospital series).

LABORATORY DATA

I—Total and differential white blood counts are of little value. Infections, hemorrhage, shock, and dehydration all influence the blood and have their effect on the blood count. The red blood count is usually high, over 5 million. Increase in the hemoglobin may be utilized as an index of the severity of shock.

II—The demonstration of the increase amylase activity of the blood is diagnostic. The increase in amylase in the blood appears within a few hours after the onset and reaches a peak within 48 to 72 hours and then returns rapidly to normal. It may be normal for the first 8 to 12 hours. The urine amylase, on the other hand, becomes elevated 12 to 24 hours later than the serum and remains elevated for a longer time and is therefore more helpful in the diagnosis when the patient is seen later in the disease. Both may be normal in cases that have widespread destruction (see table 7 for amylase determinations in the Baltimore City Hospital series).

Pancreatic serum amylase determination should routinely be performed on all patients with: 1) biliary colic, 2) pain of greater severity than one usually encounters or associates with biliary colic, 3) radiation of pain to the left epigastrium and/or to the region of the left scapulae, 4) the presence of marked muscle guarding bordering on rigidity, 5) a greater degree of constitutional reaction than one usually finds in biliary colic, with higher fever, increased pulse rate, marked leukocytosis, 6) the association of mild shock, 7) a lack of relief of pain following hypodermic injection of opiates.

In interpretation of hyper-enzymemia (7) which is only moderate, that is, values below five times the normal concentration, i.e., 500 units, may possibly be the result of acute abdominal processes not originating in the pancreas. The amylase values are usually higher in the less severe cases and highest in edema of the pancreas, while only moderately elevated in pancreatic necrosis. In contrast, the fasting blood sugar is not at all or only little above normal in mild cases and is increased in proportion to the extent of the process in severe cases.

Other causes of elevated blood amylase are: (8)

1) Renal retention, 2) Cancer of the pancreas, 3) Perforation of the duodenum, 4) Obstructive lesion of the salivary ducts and suppurative salivary adenitis. When a blood amylase of less than 1000 is obtained, the patient should void three times at hourly intervals. The first specimen is discarded. The amount of amylase in each of the remaining specimens should be approximately equal. Normally the ratio of the

amount of amylase excreted in the urine in one hour to the amylase concentration of the blood is greater than 1. When the level of the blood amylase is elevated as a result of renal retention, the amount of amylase excreted in one hour will be found to be less than the level of the blood amylase.

III—Serum and urinary lipase are not consistently altered and cannot be relied upon as diagnostic aids.

IV—In acute pancreatitis, white opaque areas of so called fat necrosis are commonly seen (7). These areas of fat necrosis have been attributed to the action of pancreatic enzymes which hydrolyze fat into glycerine and fatty acids. The latter then combine with calcium to form calcium soaps. This shift in body calcium frequently results in a decreased concentration of calcium in the blood stream. This occurs between the second and fifteenth day. If the calcium level falls below 7 milligrams per cent, the patient has a fatal prognosis.

V—A small group will show electrocardiographic type changes, thought to be caused by low calcium levels (11).

VI—Roentgenography in later stages of the disease frequently shows a segmental type of ileus. Sixty-eight per cent of the patients show this segmental type of ileus, mainly of the transverse colon (11).

Serum amylase is a great aid if obtained in the first stage, but even if the diagnosis is made, one cannot differentiate acute pancreatic edema from necrosis. It is probable that about 80 per cent will be the edematous type. There are 3 features which will help differentiate between the edematous and necrotic type, after the diagnosis of pancreatitis has been made.

1. The appearance of true circulatory impairment. Shock is seldom part of the symptoms in edematous pancreatitis even when the pain is severe. When it is present, shock should be considered as an indication of necrosis of the pancreas.

2. Spreading peritonitis is indicative of pancreatic necrosis.

3. The failure to subside indicates pancreatic necrosis.

Much of the confusion in the literature on the therapy of acute pancreatitis is undoubtedly caused by the existence of at least two types of the disease. 1) Where the pancreas is the site of an acute edematous inflammation without evidence of necrosis, 2) Hemorrhage and necrosis. With the first type, there is a low mortality whether treated conservatively or surgically (see table 8). Another source of difficulty in evaluating the results of therapy has been the uncertainty in making a bed side diagnosis of acute pancreatitis. As long as this is true, the results of therapy could only be evaluated as—a) patients who received surgery, b) patients who died and came to autopsy (see tables 5 to 9).

Recently, the trend of therapy of acute pancreatitis has been toward conservative medical therapy unless the diagnosis is so obscure as to dictate an emergency exploratory laparotomy to obviate the catastrophe of overlooking a perforated peptic ulcer, or another acute surgical condition. This conservative trend is based on the following observations.

1. In 1913, Whipple demonstrated that the products of pancreatic destruction were not toxic when injected intravenously or intra-peritoneally in the laboratory animal (4).

2. There is no surgical procedure that will definitely relieve the pathologic process.
3. The mortality (surgical) is directly proportional to the extensiveness of the operative procedure.
4. The clinical improvement in those patients who survived the operation was rarely so dramatic as to indicate that the operation was the decisive factor in the recovery.

The object of treatment is to place the pancreas at rest and to stop the activation of trypsin within the pancreas. This is done by:

1. Starvation, which markedly inhibits the secretion of tryptic ferments.
2. Relief of pain with the use of adequate dosages of morphine or by injection of the splanchnic nerves.
3. Atropine and ephedrine to inhibit the nervous stimulation of the pancreas.
4. Gastric suction. The tube should not be allowed to pass through the pylorus, or else acid gastric secretions will pass into the duodenum and cause the pancreas to be stimulated.
5. Transfusion.
6. Calcium gluconate if the serum calcium is low.
7. It has been suggested that nitro-glycerine under the tongue shortly after an acute attack of pancreatitis has begun, may lead to a dramatic abortion of the attack.
8. If intravenous glucose is given, the physician should be careful of diabetes. Many authorities suggest that insulin be given with the glucose, so as not to stimulate the pancreas.
9. Steatorrhea is controlled by giving pancreatin 2 to 10 gms. three times a day, and a diet low in fats.

Treatment should be continued until the temperature has returned to normal for a minimum of 48 hours. If oral feedings are started too soon, an exacerbation of the disease results.

The major difficulty in conservative treatment is that it is sometimes impossible to rule out a ruptured peptic ulcer, intestinal obstruction, or some other pathologic condition. In the 30 cases herewith reported, 21 were explored surgically. All of these cases were explored to rule out some condition other than acute pancreatitis. In the differential diagnosis, acute pancreatitis was listed, but never as the primary diagnosis (see table 10).

If the diagnosis of pancreatic necrosis is made, the question of operation must be seriously considered. These patients may recover spontaneously with conservative therapy, but on the other hand, it would seem justifiable to assume that extensive necrosis of the pancreas should be looked upon as a perforative lesion leading to peritoneal infection and thus either to suppuration or spreading peritonitis. As such, it would probably require surgical help even if the operation was confined to drainage of the site of perforation, i.e., lesser peritoneal sac.

If the diagnosis of acute pancreatitis is established, and conservative treatment adopted, good surgical judgment should still prevail during the full time the patient is under observation. The possibility of abscess formation during the first 2 days is

remote. Suppuration usually is indicated by an elevation of the temperature and white count, increase in abdominal rigidity, and failure of the symptoms to subside after 2 to 3 days of supportive therapy. In this case it is best to resort to surgery, employing the least extensive procedure. Those patients who are in profound circulatory collapse, present a problem. They are poor risks, but the progression of perforative peritonitis can often be halted by surgery alone.

There are 5 surgical procedures in the treatment of acute pancreatitis (see table 11).

1. Pancreatic drainage, by splitting the pancreas to encourage external drainage of the necrotic material.

2. Drainage of the lesser sac to prevent toxic product accumulation and to forestall pseudocyst formation.

3. Cholecystostomy to decompress the entire biliary tree.

4. Choledochostomy, only indicated in the presence of jaundice as a result of stones.

5. Cholecystectomy may have to be done, but as a rule it does more harm than good.

In regard to the decision whether cholecystectomy is indicated after an attack of acute pancreatitis, it appears that if one would have advised cholecystectomy had pancreatitis not developed, then one should of course continue to advise cholecystectomy. This operation should be done 7 to 10 days after the subsidence of the acute symptomatology in order to remove the offending organ before the complication of recurrent acute pancreatitis occurs.

If cholecystectomy is performed after an attack of acute pancreatitis, some authors say the common duct should be explored for obstruction.

An important disadvantage of surgery in severe cases is the rather frequent incidence of wound disruption, formation of pancreatic fistulae or of complicated wound infections with much prolonged sickness.

The recurrence rate if no operative procedure is done, is approximately 50 per cent. In order to prevent recurrences, some surgeons are now cutting the vagus nerves in addition to doing gallbladder surgery. Division of the vagus nerves will interrupt the two important stimuli to the pancreas. The hormonal stimuli will be reduced to a minimum, and the acid secretion of the stomach will be decreased.

Another type of treatment is by roentgenology (9). Experimental pancreatitis was produced in animals by injecting bile under slight pressure into the pancreatic duct. After acute pancreatitis had been induced they were given roentgen therapy. It was found that too large a dose of roentgen rays may well defeat the purpose for which it is administered, i.e., to inhibit enzyme production in the already damaged pancreas. Furthermore, studies proved that repeated serial exposures of the pancreas to these rays may well have a cumulative effect which acts as if an initial heavy dose had been given. It was found that an appropriately small single dose, 90 roentgen units, administered to dogs having experimentally induced pancreatic necrosis, appears to inhibit amylase enzyme production with minimization of pancreatic tissue destruction.

Analyses of 30 Cases of Acute Pancreatitis at the Baltimore City Hospitals

TABLE 1

Total number of cases	30		
Average age	45.2		
Males	13	43%	10 white—3 colored
Females	17	57%	8 white—9 colored

TABLE 2

Possible Causes of Pancreatitis in the BCH Series

	NO. OF PATIENTS		NO. OF PATIENTS
Gallbladder disease	15	No gallbladder disease	11
Alcoholic	3	Gallbladder disease with removal	1

TABLE 3

Predominate Symptoms—of BCH Series

	NO. OF PATIENTS		NO. OF PATIENTS
Pain	25	Diarrhea	5
Nausea	22	Palpable mass	4
Vomiting	21	Fever	4
Distention	21	Constipation	3
Abdominal spasm	17	No abdominal signs	3
Absent bowel sounds	6	Pneumonia	12
Jaundice	5	Cyanosis	1
Chills	5	Mottling	1

TABLE 4

Blood pressure in the BCH Series

Normal—28 patients	Lowered—1 patient	Shock—1 patient
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TABLE 5

	NO. OF PATIENTS	PER CENT
Diagnosis made primarily at operation	16	53
Diagnosis not made until autopsy	9	30
Diagnosis made on elevated amylase	4	13
Diagnosis not made at operation but at autopsy	2	6
Diagnosis made at secondary operation	1	3

Analysis of 30 Cases—Continued

TABLE 6
History of Previous G.I. disturbances

	NO. OF PATIENTS	PER CENT
No history	11	36.6
Indigestion	10	33.3
Recurrent pain	8	26.6
Gallbladder disease with removal	1	.03

TABLE 7
Amylase Determinations

	NO. OF PATIENTS
Gallbladder disease	15
Alcoholic	3
No gallbladder disease	11
Gallbladder disease with removal	1

TABLE 8
Mortality & Survival Statistics of the BCII Series

	NO. OF PATIENTS
<i>Operated on and survived</i>	
Interstitial pancreatitis	12
Pancreatic necrosis	3
<i>Operated on and expired</i>	
Interstitial	0
Pancreatic necrosis	6
<i>Conservative treatment and survived</i>	
Interstitial pancreatitis	4
<i>Conservative treatment and expired</i>	
Diagnosis at post—Pancreatic necrosis	5

TABLE 9

	NO. OF PATIENTS
<i>Diagnosis at operation (1st op.)</i>	
Acute pancreatic necrosis	6
Interstitial pancreatitis	12
Perforated diverticulum	1
Cholecystitis	2
<i>Diagnosis of pancreatitis made at 2nd op.</i>	1
<i>Diagnosis at autopsy</i>	
Pancreatic necrosis	5
Interstitial pancreatitis	0
Diag. not made at op. but at autopsy	2

TABLE 10
Primary Preoperative Diagnosis

	NO. OF PATIENTS		NO. OF PATIENTS
Acute cholecystitis	9	Stricture of common duct	1
Perforated gastric ulcer	4	Carcinoma of stomach	1
Intestinal obstruction	3	Acute abdomen	1
Perforated gallbladder	1	Carcinoma of head of pancreas	1

Initial Diagnosis of Those Treated Conservatively and Expired

Cardiac	1	Arsenical hepatitis	1
Pneumonia	1	Carcinoma of the ovary	1
Intestinal obstruction	1		

TABLE 11
Operation Performed

	NO. OF PATIENTS		NO. OF PATIENTS
Exploratory laparotomy	7	Exploration of common duct	2
Cholecystectomy	6	Cholecystogastrostomy	1
Cholecystostomy	3	Drainage of lesser sac	1
		Closure of perforated diverticulum	1

CONCLUSIONS

- 1) The diagnosis of acute pancreatitis will not be made unless considered.
- 2) A strict non-operative policy in all cases of acute pancreatitis will be followed by a fairly low total mortality but will probably lead to the death of a few patients who might otherwise recover following an appropriate surgical procedure.
- 3) Surgery is not indicated in patients with acute pancreatitis of the edematous type, but may be indicated in the necrotic or hemorrhagic type.
- 4) Since the amylase acts the same in both types of pancreatitis, differentiation must be based upon the clinical appearance and progress of the patient.
- 5) Surgery when indicated must be adequate but not extensive.

SUMMARY

- 1) A statistical study was made of the proved cases of acute pancreatitis at the Baltimore City Hospitals for the last 10 years, 1941-1950. The study showed results similar to other clinics in this country, so only the results at Baltimore City Hospitals have been presented.
- 2) Recent concepts of the etiology, associated pathology, signs, symptoms, diagnosis and treatment of acute pancreatitis are reviewed.
- 3) Acute pancreatitis is a dangerous disease and is not as rare as was formerly believed.
- 4) Since most of the cases of acute pancreatitis are admitted to the surgical ser-

vice at Baltimore City Hospitals, more patients have been treated surgically than medically. The consensus of opinion at the present time, however, is that conservative medical management is the treatment of choice with surgical intervention when indicated.

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TREATMENT OF ACUTE GONORRHEAL INFECTION WITH ORAL PENICILLIN*

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Since the advent of specific methods of chemotherapy of gonococcal urethritis, numerous reports have appeared confirming early findings of the efficacy of penicillin in these infections (1, 2, 3). The occurrence of sulfonamide reactions in patients, and the resistance of *N. Gonorrhoeae* to this agent soon made penicillin the drug of choice. Recently, the results of both aureomycin and chloramphenicol therapy are promising (4, 5).

It is the purpose of this study to determine the effect of orally administered penicillin on acute urethritis caused by *N. Gonorrhoeae*. Furthermore the enhancing action of p-(di-n-propylsulfanyl)—benzoic acid ("Benemid") (6) was evaluated. The use of oral penicillin in gonorrhea has previously been reported (7, 8, 9). The effect of caronamide on the enhancement of penicillin blood levels was reported by Shaw et al (10) in 1947. The introduction of Benemid provided another compound capable of suppressing renal clearance and thereby maintaining plasma concentrations of penicillin for 8 or 10 hours beyond that obtained when penicillin is administered alone.

METHOD OF STUDY

Patients in this series were consecutively admitted males with acute urethritis from which gram-negative diplococci were initially demonstrated. Patients were excluded from the series whose history of any form of previous treatment was obtained or subsequent cultural methods failed to confirm the original impression. The remaining patients were divided into 4 groups as outlined in Table I. Each received a single oral dose of penicillin or penicillin and Benemid. Clinical and bacteriologic observations were made at 24, 48 and 72 hour intervals. Thirty-six patients were treated in this manner. Of this group, four were white. Ages ranged from 15 to 49 years. Previous bouts of urethritis were admitted by twenty-five of the patients. The average duration of symptoms was 4.1 days. Incubation periods varied from 2 to 21 days.

LABORATORY METHODS

Direct smears were made in all cases initially and stained by the Gram technique. Before beginning treatment, cultures were made in all instances, on chocolate and blood-agar. Urine sediments were cultured at the time of the 72 hour study. All cultures were incubated at 37 C under reduced oxygen tension and examined at 24, 38 and 72 hour intervals before being discarded as negative. Organisms labeled *N. Gonorrhoeae* met all gross and microscopic morphologic requirements, fermented glucose only, and were "oxidase positive" using tetramethyl-paraphenylene diamine.

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Received for publication Jan. 31, 1951.

Penicillin serum levels were determined by the method of Ehrlich using *S. aureus*, 209P. Serial blood specimens were obtained at hourly intervals following the single oral dose of drug, and sera were stored at -70°C until the assay was performed.

RESULTS

Gram-negative diplococci were demonstrated in the urethral exudate in all cases before treatment. Cultural and biochemical analysis identified the etiologic agent as *N. gonorrhea*. Negative cultures were obtained in eight instances after 12 hours; the remainder did not contain gonococci after 24 hours. The average duration of discharge was about 12 hours; all subjective symptoms had remitted in 48 hours in most instances. Relapse occurred in 3 of these 36 patients after a period of 48 to 72 hours. In all cases, however, response to additional oral penicillin was excellent. The occurrence of relapse in the higher dosage group does not make drug dosage a significant factor. In this small series Benemid did not appear to add to the efficacy of oral penicillin, clinically, in this type of infection.

TABLE I
Treatment of Gonorrhea with Oral Penicillin with and without Benemid

GROUP	NUMBER OF PATIENTS	UNITS OF PENICILLIN	GRAMS BENEMID	NEGATIVE CULTURES*	RELAPSES	PER CENT OF CURES
A	9	500,000	0	20.5	1	89
B	9	500,000	2.0	15.7	0	100
C	9	300,000	0	23.3	1	89
D	9	300,000	2.0	21.1	1	89

* Mean time for appearance of first negative culture; difference is not significant for the methods employed.

SUMMARY AND CONCLUSIONS

A single dose of 300,000 or 500,000 units of penicillin given orally with or without 2.0 grams of Benemid effected a complete clinical and bacteriologic remission for a three day period in an average of 91.7 per cent of 36 cases so treated. It is felt that after this length of time reinfection cannot be excluded. In this series two patients returned at a later date complaining of urethritis. The history of these instances was obviously one of reinfection. Long-term bacteriologic follow-up was not available in the others who were successfully treated.

This "cure rate" is comparable to those reported with parenteral penicillin.

Benemid did not improve the results obtained at the particular dosage level used in this series with smaller doses. Benemid may prove to be a more important factor since serum concentrations are enhanced to some extent by this compound.

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AN ADDITIONAL CASE OF BRILL'S DISEASE IN BALTIMORE*

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In 1950 Schoenbach (1) reported a case of Brill's disease in Baltimore. Recently another patient whose clinical and serologic findings support the diagnosis of recrudescant typhus has been studied.

REPORT OF CASE

The patient, a 42 year old Hebrew woman, entered the Lutheran Hospital, Baltimore, on January 28, 1950, complaining of headache, chills and fever.

Past History: When 15 years of age the patient contracted classical epidemic (louse borne) typhus fever while living in Russia. During this epidemic season her father contracted typhus and succumbed, whereas the patient and her brother were only moderately ill with the same disease. Other features of the past history are essentially irrelevant; thyroidectomy age 26; tonsillectomy age 29; hysterectomy age 39.

History of Present Illness: Approximately 2 weeks prior to hospitalization the patient developed an infection of the right index finger. The lesion, a paronychia, responded satisfactorily to hot compresses, penicillin, incision and drainage. Four days prior to admission the patient became suddenly ill with chills, fever and headache. When examined, the site of the prior pyogenic infection of the finger was healed. She was given 300,000 units of penicillin and instructed to remain in bed. The persistence of temperature and symptoms made hospitalization advisable.

When admitted to the hospital on the fourth febrile day the patient was moderately ill with a temperature of 103 F and persistence of headache which was mostly frontal in character. An examination was essentially negative. The blood pressure was 90 systolic over 60 diastolic, pulse 110, respiration 26 and slight tenderness elicited on general palpation of the abdomen. The blood leukocyte count was 6,650 per cm. On the evening of admission (the fourth day) the temperature reached 105 F the pulse 110. The history and findings suggested an enteric disease or typhus fever. Aureomycin treatment was instituted with an initial oral dose of 500 mgm. and subsequent doses of 200 mg. every 4 hours. On the fifth day of disease a pink, macular, irregular rash was first detected on the arms, chest and abdomen. Petechial hemorrhages were noted on the conjunctivae bilaterally. An examination of the lungs revealed bilateral moist rales which were heard predominantly in the posterior region. A roentgen examination showed patchy infiltration in both basal areas.

Additional laboratory studies revealed no significant changes. An electrocardiogram was normal. The blood concentration of sugar and urea nitrogen was normal. Three blood cultures were sterile and 3 cultures of the feces were negative for pathogenic bacteria. Two urine cultures were negative. A test for the heterophile antibody was negative as were agglutination studies for typhoid and paratyphoid.

Course in the Hospital: The patient's temperature subsided by lysis, reaching normal levels on the seventh day of disease. The macular skin lesions did not progress after the fifth febrile day and were completely absent on the seventh day. Headache was improved within 24 hours after beginning specific therapy and was fully abated on the second treatment day with concurrent amelioration of the pulmonary signs. Within several days the patient regained her strength and appetite and convalescence was entirely uneventful. She was discharged from the hospital on the tenth febrile day. A chest roentgenogram was negative at this time.

Laboratory Confirmation of Brill's Disease: Unfortunately aureomycin treatment was initiated before attempts were made to isolate *R. prowazekii* from the patient's blood. Sterile clotted blood

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Received for publication May 20, 1951.

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inoculated intraperitoneally into male guinea pigs did not result in illness. An examination of serial specimens of the patient's blood by means of complement fixation tests using epidemic and murine typhus antigens provided the following results:

DAY OF DISEASE SERUM DRAWN	EPIDEMIC	MURINE
6	0	0
10	1280	160
21	1280	80
39	640	80

DISCUSSION

Knowledge of the identification and clarification of the various typhus fevers in the United States throughout the past century has been painstakingly acquired.

In 1936 the eminent clinician, Gerhard (2) clearly differentiated, on clinical grounds, the difference between typhoid fever and epidemic louse-borne typhus. This physician was a pupil under the great Louis of France and shortly after his return had the opportunity to study an epidemic febrile disease in Philadelphia. On the basis of clinical and pathologic evidence, Gerhard wrote that the disease in Philadelphia was not that of classical typhoid fever as known on the continent. One of his strongest argumentative points was absence of ulceration in the intestinal tract. These observations of Gerhard's were the first to clearly differentiate between two diseases which had caused confusion during the previous centuries. Another classical contribution came from Brill (3) who at the turn of the century reported a disease which was occurring intermittently in New York City, a disease which suggested typhus fever to this clinician although milder in degree than the classical form of louse-borne disease. In Brill's conclusions, it was stated that although the entity was in many respects similar to typhoid fever, the shortness of the febrile course with the profuseness of the rash suggested mild typhus fever rather than enteric fever. As the result of this classic work, Brill's name became identified with the disease and practically all cases of typhus occurring in the United States were so diagnosed.

Maxcy (4) in 1926 made an extensive epidemiologic study of typhus fever among typhus fever patients, particularly in the southeastern part of the United States. Dr. Maxcy observed that the illness occurred among individuals in close association with granaries or food depots. He reasoned that the most likely reservoir for the rickettsia was a rodent, probably the rat, and that transmission to man was mediated by fleas or other insect vectors. Confirmation of this prophesy came in 1930 when Dyer et al (5) successfully isolated a rickettsia (*R. mooseri*) from the brain of rats trapped in the environment of typhus cases in Baltimore. Indeed, Dr. Louis A. Krause made the clinical diagnosis which led to the investigation by the aforementioned Public Health workers. Subsequently, Dyer and his group showed that the flea was able to transmit typhus fever under natural and experimental conditions and thus, for the first time, there was proof that certain of the typhus in the United States was of murine origin, transmitted to man by fleas. This disease, of world-wide distribution, is known as murine typhus fever.

During the second and third decades of the twentieth century, the great bacteriologist, Dr. Hans Zinsser, worked extensively with Brill's disease, particularly among patients from Boston, New York and Philadelphia. Dr. Zinsser, on several occasions, was able to isolate rickettsiae from the blood of these patients which, when inoculated into susceptible animals, behaved similarly to the rickettsia of epidemic louse-borne fever. Furthermore, it was noted by Dr. Zinsser and his collaborators that most of the cases of Brill's disease occurred in immigrants who had come to the United States from the Balkan countries, Poland and eastern Russia. A high percentage of these individuals when questioned revealed that they had suffered epidemic louse-borne typhus earlier in their lives in the old world. Thus, based upon careful epidemiologic and laboratory evidence, Dr. Zinsser proposed that Brill's disease was recrudescent typhus fever and not re-infection. He postulated that years later, after immigration to this country, a recrudescent infection occurred which was milder than the primary febrile episode and usually non-fatal. An explanation for the change in the patient's immune status was not fully explained although Zinsser looked upon Brill's disease as evidence that rickettsiae may remain dormant within the host. Indeed, Zinsser spoke of the "immunity of tolerance" and assumed that years later the rickettsiae, having never been fully eradicated from the host, were able to surmount the immune mechanisms and cause recrudescent disease.

In this regard it is interesting to note that immediately prior to onset of illness in our case, the patient had experienced a pyogenic infection sufficiently severe to necessitate the use of penicillin plus incision and drainage. Furthermore, in Schoenbach's case (1) the patient had undergone a partial thyroidectomy 10 days prior to onset of the recrudescent typhus. In these 2 patients the presence of 1) infection and 2) surgical trauma may have served as exciting factors in upsetting the normal balance of various stabilizing mechanisms within the host and provided the rickettsiae an upper hand.

Further advancements pertaining to the origin and nature of the various rickettsioses have been made possible through the improvement and expansion of laboratory techniques. Gauld (6) and other investigators showed by means of the complement fixation test that patients with Brill's disease possess antibodies which are clearly of the epidemic or louse-borne type. By means of this specific laboratory test for rickettsial diseases, Brill's disease was identified as being allied with classical epidemic typhus and distinct from the murine variety. Finally, Smadel (7) and his group working in Malaya have added additional evidence to the "recrudescent" postulate of Zinsser. In working with patients convalescing from scrub typhus (tsutsugamushi disease) these investigators successfully isolated virulent rickettsia from the lymph glands of patients who had contracted their disease as much as 2 years previously. This observation clearly demonstrated that rickettsia may remain viable within cells of the reticulo-endothelial system without overt disease in the host. Recently Murray et al (8) have reported the successful isolation of *R. prowazeki* from patients with Brill's disease through application of lice to the skin during the early stages of disease.

The case which we have presented is one of the few patients with Brill's disease reported from the city of Baltimore. Although the causative rickettsiae were not

successfully isolated, presumably because of the premature administration of aureomycin, the serologic results unquestionably indicate that this patient was suffering from the epidemic louse-borne type of rickettsial disease. Her history of typhus in early life while living in the eastern part of Russia coincides with the usual story presented by patients with Brill's disease. The rapid recovery with aureomycin is in keeping with the numerous reports now available relative to the efficacy of aureomycin and other antibiotics in all of the rickettsioses.

CONCLUSIONS

A case of Brill's disease occurring in the city of Baltimore is reported. Diagnosis is based upon the history and serologic findings. Rapid recovery ensued after treatment with aureomycin.

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Acknowledgement. The authors wish to thank Dr. Marvin H. Davis of the staff of the Lutheran Hospital in Baltimore for his assistance in the management of this patient.

CLINICO-PATHOLOGIC CONFERENCE

From the Case Histories, University Hospital, Baltimore

CLINICAL HISTORY

This 72 year old white male painter entered the hospital complaining of shortness of breath, dizziness, palpitation, dark stools and a vague epigastric pain. All complaints were of approximately 6 months' duration.

The present illness began 6 months previously and, in the beginning, was characterized mostly by dizziness, shortness of breath, and palpitation. These symptoms increased, and approximately 4 months prior to admission, he noted dark and occasionally tarry stools. About this same time, he noted vague epigastric pain which increased in intensity after finishing a heavy meal. He vomited on only one occasion approximately 6 weeks prior to admission. No blood was noted. The patient was examined by his local physician who treated him with iron and other medicaments until 3 months before admission. He was then referred to several consultants. He continued taking the same iron medication. Because of the gradual progression of symptoms, the patient was admitted to the hospital. During his illness, he had lost approximately 8 to 10 pounds. Mineral oil had been taken nightly during the last few months.

This individual was a well developed, well nourished, extremely pale, white male who did not appear distressed. He was alert and cooperative. His appearance did not belie his age. The skin was pale, warm, and dry. The trachea was in the midline. There was no cervical, axillary, or generalized lymphadenopathy. The chest expanded well, and was judged by percussion and auscultation to be normal. There were no cardiac murmurs or disturbances in rhythm. The abdomen was scaphoid and relaxed. There was slight tenderness in the epigastrium. There was a mass just above the umbilicus (Figure 1). This mass was questioned by several observers. The liver extended to 4 cm. below the right costal margin. There were bilateral, direct, incomplete, reducible inguinal hernias. The genitalia were normal. The rectal examination revealed a moderately enlarged, firm, smooth prostate. The patient's blood pressure was 120 mm. of mercury; pulse rate per minute, 70; respiratory rate per minute, 20; and temperature, 98 F.

After admission to the hospital, the patient received 500 cc. of whole blood by transfusion. This transfusion and three subsequent ones caused a rise of hemoglobin concentration from 56 per cent normal to 90 per cent. After one transfusion, his temperature rose to 102.4 F, but there was no other discernible reaction. On the third day of his hospitalization, the blood urea nitrogen concentration was found to be 15 mgm. per hundred cc. of blood. The carbon dioxide combining power, plasma chloride concentration, and bilirubin concentration were normal. The plasma proteins amounted to 6.33 grams per hundred cc. of blood. The proportion of albumin and globulin was normal. Five days after admission, the patient was treated surgically.

After this operation, the patient progressed normally for 2 days. However, hiccoughs developed but were controlled with carbon dioxide. On the third postoperative day, he vomited approximately 500 cc. of fluid, which had an odor of feces. Wangen-

steen suction was started on the sixth post-operative day. A medical consultant believed there was a chest lag on the right, and signs of consolidation in the right lower and possibly right middle lobes. There were tubular breath sounds and rales (Figure 2). The trachea was deviated slightly to the right of the midline. The abdomen was not distended. The patient was incontinent of urine. There was minimal edema of the feet and ankles. Penicillin was given. The patient was digitalized 6 days after operation. A thoracentesis was done on the right side and 100 cc. of fluid was removed. A culture of this fluid revealed a heavy growth of *escherichia coli*. Between the 6th and 10th postoperative day, the patient's temperature ranged between 102 F and 100 F. On the 10th day, he was bronchoscoped under local anesthesia. Prior to bronchoscopy, he coughed up considerable purulent sputum. At bronchoscopy, approximately 8 cc. of mucoid secretions were removed from the region of the carina.



FIG. 1



FIG. 2

Because of the presence of *escherichia coli* in the thoracentesis fluid, the patient was given chloromycetin ® by mouth. Blood cultures were reported negative. On the thirteenth postoperative day, a small area of wound dehiscence was noted. By the seventeenth postoperative day, the temperature decreased to 100 F and he appeared improved. On this day, 500 cc. of straw colored fluid was removed from the left chest. A culture of this fluid was reported negative. On the nineteenth postoperative day, he had three tarry stools. The blood pressure remained stable. The blood hemoglobin on the sixteenth postoperative day was 101 per cent, (14.6 grams). After the passage of the tarry stools, the hemoglobin dropped to 74 per cent, so he was given 1000 cc. of whole blood. Between this and the twenty-first postoperative day, he had numerous tarry stools, and also vomited bright red blood. Following the onset of tarry stools, chloromycetin ® was given intravenously. There was no

change in the condition of his wound, and the abdomen was not distended. His temperature ranged between 99.6 and 102 F. Despite a total of 11 pints of whole blood shock intermittently appeared until death occurred 36 days after surgery.

CLINICAL DISCUSSION

Dr. H. C. Hull: In this 72 year old male, bleeding into the alimentary canal stands as the cardinal observation. What is the cause of this bleeding? How can it be diagnosed? What should be done about it? There are possibly 3 general sources of blood appearing in the gastrointestinal tract. First, extrinsic causes, resulting from swallowing blood that originates in the respiratory tract. There were no open tooth sockets, trauma about the face or upper respiratory system, or pulmonary tuberculosis. The second group includes the causes of systemic nature. The acute febrile reactions, malaria, Kala-azar, sometimes amebiasis and also the blood dyscrasias may be assigned to this class. There is no evidence in this case from which one could deduce any of these conditions. The third large class is comprised of the intrinsic lesions of the gastrointestinal tract. About 90 per cent of gastrointestinal hemorrhages are caused by peptic ulcers, mainly duodenal; about 5 per cent result from a cirrhosis of the liver, and the other 5 per cent may be attributed to other causes. Bleeding occurs in about 25 per cent of all cases of cirrhosis of the liver and of these, 5 per cent die because of the hemorrhage. The miscellaneous group of 5 per cent is composed of many interesting and bizarre cases. Beginning with the esophagus, lesions such as ulcers or esophagitis come to mind as causes of bleeding into the gastrointestinal tract. If the bleeding is profuse, one would expect blood to be vomited; if the bleeding is slight, tarry stools would appear. Hiatus hernia may be found at this patient's age. Of all the unusual lesions in the stomach that can produce bleeding and melena, I think of polyps, benign leiomyomas, syphilitic lesions, and pyloric varices. Foreign bodies rarely produce bleeding. If hemorrhage occurs in the duodenum, I think of peptic ulcer, but if jaundice appears with melena, carcinoma of the ampulla of Vater should be accorded a favored opinion. Lesions such as lipomas or leiomyomas of the small intestines do not readily bleed. Carcinomas of the small intestine obstruct rather than bleed. Remember that lesions past the first several feet of jejunum rarely cause the patient to vomit blood, despite massive bleeding. One thinks also of regional ileitis, Meckel's diverticulum, vascular catastrophe, tuberculosis, or amebiasis. It is usually taught that bleeding into the stool from the wall of the upper gastrointestinal tract will be black and tarry and bleeding from the lower portion will be red. I have seen black blood in the stool from a lesion in the colon. I do not think it is sound teaching to say that black and tarry stools always indicate bleeding from the upper gastrointestinal tract, and red stools, bleeding from the lower gastrointestinal tract. The color of the stool depends on the length of time the blood has been held in the gastrointestinal tract.

I would like to call your attention to a question that may confront the physician and the surgeon when a patient is admitted in shock from melena or hematemesis of an unknown cause. Should a patient of this type be treated by surgical means? This problem is entirely different from the one that is presented by a known case of gastric ulcer. I think it is risky to do surgery on those people with an unknown diagnosis. Most likely, an exploratory operation would be fatal.

May I see the roentgenographs taken before surgery?

Dr. John Brackin: I see a large filling defect in the prepyloric antrum of the stomach. This has the appearance of a neoplasm. (Fig. 1).

Dr. Harry C. Hull: I think it is well to recall that very few patients with carcinoma of the stomach will vomit blood, nor do they have profuse melena until later in the disease. During the progress of the carcinoma, they have occult blood, and anemia develops slowly. Therefore, when you see a man who has vomited blood, there is good reason not to suspect a carcinoma. Possibly, somebody operated on him and did not remove this ulcer or carcinoma. Only 1 in 4 patients with carcinoma of the stomach are operable. This man's condition became alarming after operation, so we will consider possible postoperative complications. He vomited on the third postoperative day. Whether he aspirated vomitus, I do not know. It is likely he had atelectasis in the right lung, as this is the most common pulmonary complication following surgery. Hemorrhage, obstruction and peritonitis are the three major complications of gastric surgery. Later he vomited some material of fecal odor. If one sees fecal vomitus, it generally indicates expulsion of intestinal fluid. He could have aspirated this vomitus which could explain the presence of the colon bacillus in the fluid taken from the right hemithorax. Because he continued to bleed after surgery, I suspect either a vessel became loose, or because of a pulmonary complication, he coughed and disrupted his wound. Leakage from a gastrointestinal anastomosis is likely to come 3 days after the operative procedure. This man's abdomen was soft so I doubt if there was any significant leakage. I think that a ligature slipped from a blood vessel and ensuing hemorrhage led to his death by shock. It could be that this patient had a large ulcer on the posterior gastric wall that could not be removed. If the ulcer went all the way around, I would think that it would be undoubtedly a carcinoma. This opinion is opposed by the loss of only 6 pounds in 6 months and the persistence and copiousness of the bleeding. I single out as my final diagnosis, gastric ulcer and post-operative hemorrhage.

Dr. Brackin: This patient had been given a barium enema. This enema exhibits a small round filling defect in the cecum which could result from a small polyp. After the patient evacuated the barium enema, he was given barium by mouth. The lesion disclosed by this procedure is interpreted as a large bleeding ulcer with a blood clot in the stomach.

Dr. Karl E. Mech: Would the occupation of this patient, a painter, enter into this at all?

Dr. Harry C. Hull: I do not think lead poisoning could have caused the symptoms.

Senior Student: I would like to ask Dr. Hull how much influence this patient's age had on his choice between ulcer and carcinoma.

Dr. Hull: The age of the patient does not influence me very much. Even though carcinoma is more common past the fourth and fifth decades, there are some people in their twenties with carcinoma of the stomach. One thinks of carcinoma of the stomach in this case, but I cling to a diagnosis of ulcer because carcinomas cause little bleeding.

Dr. Raymond M. Cunningham: Because this is a prepyloric lesion according to the roentgenograph, it is more likely a carcinoma than an ulcer. That has little to do with the immediate cause of the man's death. If there had been a resection of his stomach,

he should not have bled after the operation. The problem before us is why he continued to have tarry stools after the operation. Dr. Hull suggests that a vessel broke or that the surgeon found the lesion unresectable. Both are very good possibilities. I think we are going to hear from the pathologists that this man had more than one lesion. I presume he had another lesion elsewhere responsible for continued bleeding.

Dr. C. R. Edwards: Postoperatively, the patient did well for 2 days, except for hiccoughs which were controlled by carbon dioxide. On the third postoperative day, he vomited approximately 500 cc. of fecal fluid. Wangenstein drainage was started at this time. I think there was unwise delay in treating this patient, particularly having subjected him to an operation for a condition which predisposes to perforation. Even though we do not know whether this patient had a leak in the stomach or not, gastric drainage should have been instituted immediately in the face of hiccoughs. I do not think the hiccoughs were as well controlled as the postoperative report leads us to believe. If Wangenstein drainage is needed in a postoperative patient, it is needed before 72 hours have elapsed.

PATHOLOGIC DISCUSSION

The specimen removed during surgery consisted of a major portion of the stomach and part of the gastrohepatic omentum.

A large indurated ulcerating lesion involved the entire wall of the stomach proximate to the lesser curvature, the base of the ulcer being hemorrhagic and necrotic, and the edges raised and friable. A number of lymph nodes were found in the gastrohepatic omentum, but these did not contain metastases. The tumor was an adenocarcinoma, mucoid in type.

At autopsy, an upper transverse abdominal incision measuring 18 cms. in length was noted. On the left side of the incision, a wound disruption had occurred and loops of small intestine had matted together by friable adhesions and a purulent exudate. The remainder of the incision was held together by black silk sutures. Immediately beneath the operative scar, numerous fresh and old adhesions between loops of small intestine, liver and the anterior parietal peritoneum were seen. There were also few organized adhesions between loops of small intestine. There were about 25 cc. of clear, straw-colored fluid in the peritoneal cavity. Fresh adhesions united the right lobe of the liver and the anterior parietes. Similar adhesions were noted involving the left lobe of the liver. When these adhesions were freed on the left, a subphrenic abscess containing about 25 cc. of thick, green foul-smelling pus was exposed. This abscess cavity was bounded by the spleen, left lobe of the liver and diaphragm. When the stomach was freed from the under surface of the liver, a gastrojejunostomy of the Hofmeister type was found.

Necrosis of the suture line at the closed end of the stomach proximate to the lesser curvature was noted. This had become sealed to the under surface of the right lobe of the liver. There was no free communication with the general peritoneal cavity. At the blind end of the stomach, there was necrosis of the suture line with a perforation at the angle. This perforation was 1.5 cm. in diameter. The interior of the stomach showed mild hemorrhagic gastritis. The gastrojejunal anastomosis had healed. There was an opening of 6 cm. in the stroma. The perforation was adherent

to the undersurface of the right lobe of the liver. There was no evidence of obstruction. The contents of the stomach consisted of thick, bile-strained mucus. The duodenal stump showed necrosis and separation of the suture line. This was adherent to the under surface of the right lobe of the liver and had been completely walled off. There was no free communication with the general peritoneal cavity. Within the blind end of the duodenum, a vessel was seen which in all probability was the pancreaticoduodenal artery. There was a recent ulceration into the lumen of this vessel. The opening of the wall of the vessel had been sealed by a fresh blood clot. In the lower ileum, cecum and entire large bowel, black tenacious tarry blood was present.

The middle and lower lobes of the right lung contained many small abscesses. These were filled with thick, yellow, foul-smelling pus.

The anatomic diagnoses rendered in this case included *muroid carcinoma of the stomach (S.P. #71300); Hofmeister gastrojejunostomy; necrosis with perforation of duodenal stump; necrosis with perforation of blind end of stomach; erosion of superior pancreaticoduodenal artery with thrombus formation; intestinal hemorrhage, marked; wound dehiscence; localized peritonitis; left subphrenic abscess; acute splenitis; fibrino-purulent adhesions, peritoneal cavity; lung abscesses, multiple, right middle and lower lobe; organized pleural adhesions, right; pulmodary edema and congestion; hydrothorax, left; central necrosis, liver; coronary sclerosis, moderate; atherosclerosis, abdominal aorta; peripheral edema.*

OBSTETRICAL CASE REPORT*

A 32 year old, white, para 3, gravida 4, had a past obstetric history of interest in that her second child weighed 9 pounds, 8 ounces, and her third child weighed 10 pounds, 4 ounces. All deliveries were uneventful. During this, the present prenatal course, urinary sugar was present on 2 occasions. Ten days before her expected date of confinement she no longer felt fetal movements and the fetal heart could not be heard. She delivered spontaneously and without difficulty of a full term, stillborn child weighing 9 pounds, 3 ounces. The puerperium was uneventful. A blood glucose tolerance test 5 days postpartum revealed a high, delayed curve, which was interpreted as typical of diabetes mellitus.

The recognition of diabetes mellitus in the pregnant female is the responsibility of the obstetrician. Many "pre-diabetics" will deliver over-sized children or will give birth to dead babies, the fetus dying during the last few weeks of pregnancy. They do not necessarily excrete sugar in the urine. Certainly, any patient who does have urinary sugar on more than one occasion, should at least have the benefit of a fast-ing blood sugar.

Diabetes mellitus affects pregnancy in several ways. There is a higher incidence of pre-eclampsia; late fetal death in utero is a common danger and gigantism of the fetus is also seen. Polyhydramnios and increased congenital anomalies are more frequent and agalactia is a common complaint.

DISCUSSION

The patient under consideration should have been treated along the following lines. With the past history of over-sized children, a glucose tolerance test should be justified. One can respect this test during pregnancy, as in the non-pregnant state. Certainly, when urinary sugar was noted on two occasions, it was mandatory. In order to salvage more fetuses, it is now the policy to interrupt pregnancy at about the 37th week. At that time a sterile vaginal examination is done. If the presenting part is in the pelvis and the cervix is partially effaced, slightly dilated and soft ("ripe"), the membranes are "stripped" and/or "ruptured". Vaginal delivery is then anticipated. If the cervix is not "ripe", then the patient should be delivered by Cesarean Section. This still birth probably could have been prevented. Not all babies can be salvaged by this routine, but the high fetal mortality rate among diabetic mothers can certainly be lowered, by this recommended line of therapy.

* *From the Department of Obstetrics, University of Maryland, School of Medicine.*

BOOK REVIEWS

Diseases of the Nervous System. *W. Russell Brain, 4th edition, Oxford University Press, New York, 1951.*

This fourth revised edition of a standard textbook of neurologic diseases shows a continuation of the author's meticulous attention to those features which, in the past, have distinguished this volume as a useful teaching adjunct. The treatment of each subject is concise, yet amazingly inclusive. References are few but are carefully chosen, particularly for their breadth of coverage but not necessarily for their originality. The chief revisions have been along the lines of advances in the treatment of certain infectious and degenerative diseases with other additions concerning increasing knowledge relating to granulomatous diseases of the nervous system. The author has included recent work on the motor cortex and the frontal lobe. These inclusions have not materially increased the size of the volume but have broadened its usefulness. The index, the composition of the text, and the printing are not changed from the third edition. Illustrations are few in number but where present are well chosen. The inclusion of more pictures would certainly enhance the value of this text. The volume continues as a useful text for students and practitioners. It could still warrant an increase in size.

JOHN A. WAGNER, M.D.

An Atlas of Anatomy. *J. C. Boileau Grant, Professor of Anatomy in the University of Toronto, 3rd edition, Baltimore: The Williams & Wilkins Co, 637 plates. 1951. \$12.00.*

This atlas, which has become quite familiar to anatomists, medical students and surgeons during its 8 years of publication, now appears in its enlarged and improved third edition. Over seventy illustrations have been added, twenty-eight of the old illustrations have been improved or replaced and some of the latter now appear in color. The new illustrations include some welcome additions such as a serial dissection of the female perineum and pelvis, and some line drawings are now replaced by half-tones. There are also new plates of the back of the neck, palate, pharyngo-tympanic tube and the middle ear; the arterial supply to the head of the femur, knee and walls of the nasal cavity; the veins of the axilla, and the ventrum of the thigh. Other worthwhile additions are the illustrations of the bronchial tree, pulmonary vessels, the broncho-pulmonary segments, important variations including those of the pancreatic ducts, and the dermatomes. This atlas is of especial value to students who dissect according to the procedure of the Edinburgh school of anatomy (where Doctor Grant, himself, received his early training), for the illustrations of serial dissections therein represent stages in the students' own work as it advances. From the standpoint of usefulness as an aid in the study of anatomy at the level of the medical student, this is probably the finest of the American anatomical atlases.

VERNON E. KRAIL, PH.D.

An Atlas of Human Anatomy. *Barry J. Anson. Philadelphia: W. B. Saunders Co. 518 pp. 1950. \$11.50.*

This is a new American anatomical atlas, produced by Doctor Barry J. Anson, professor of anatomy at Northwestern University Medical School. It is the fruition of a long-term project and includes work done by Doctor Anson with nearly 50 of his associates, past and present. The serial dissections upon which many of the illustrations are based have been carefully done, and have been faithfully and beautifully portrayed by five top-ranking medical illustrators. Many of the drawings have been engraved again from original drawings used in journal articles. There are fewer colored plates than one usually sees in the older anatomical atlases. Of the hundreds of illustrations presented, only about 90 contain color and, of these, about one-third have two or more colors. This does not detract from the beauty or usefulness of the book, however, for clarity and contrast have been achieved by other means by the artists. Various drawing techniques have been employed so that each region or structure is portrayed to best advantage; these include pen-and-ink, carbon dust and water color wash drawings. Some regions of the body are weighted more heavily than others in point of space devoted to them. These, in general, are regions which have interested Doctor Anson and his coworkers

most in their anatomical researches. For example, there is a large series of excellent illustrations of female pelvic and perineal anatomy but they outnumber the corresponding illustrations of the male in the order of two to one. More than 370 separate sketches of anomalies and variations, covering some 55 pages of the book are included, with their percentage occurrence in many cases. These should be of interest to the student and surgeon alike. Many of the dissections are novel and are ingeniously done, displaying regions in ways which have no counterparts in similar works. However, the beginning student of anatomy is not apt to reach stages in his routine dissection which correspond exactly to many of these drawings. For this reason the book is to be recommended somewhat more strongly to the practitioner or to the advanced student of anatomy.

The atlas represents a skillful and accurate piece of work, representative of the meticulous care and attention to details so characteristic of Doctor Anson.

VERNON E. KRAHL, Ph.D.

The Pharmacologic Principles of Medical Practice—By Krantz, J. C., *Professor of Pharmacology, School of Medicine, University of Maryland*; and Carr, C. J., *Associate Professor of Pharmacology, School of Medicine, University of Maryland*. 1152 pages, illustrated. Baltimore, Maryland The Williams & Wilkins Co. 1951—\$10.00.

This Second Edition of Drs. Krantz and Carr's book has been revised to include the recent rapid advances in pharmacological knowledge. The purpose of the authors is to present the pharmacodynamic and pharmacotherapeutic actions of drugs as they are applied in the treatment of disease. New chapters on The Chemotherapy of Tuberculosis, The Chemotherapy of Rickettsial Diseases, The Anti-motion Sickness Drugs, and The Treatment of the Arthritides; the Adrenal Corticotrophic Hormone and Cortisone, have been added. Changes made necessary by additions and deletions in the 14th Revision of the U. S. Pharmacopeia, in the 9th Edition of the National Formulary and The 1950 N.N.R. have been made to keep this text completely modern. New tables and illustrations have been added, and with the fourteen portraits of outstanding investigators in the field, make this book extremely interesting.

Especially valuable are the chapters on The Nature and Source of Drugs, Methods of Drug Administration and Factors which Modify Dosage and The Discovery and Evaluation of New Drugs.

To the many former students of Dr. Krantz this textbook will prove to be especially interesting. Many of the approaches to the teaching of pharmacology will be recognized with pleasure.

DR. E. RODERICK SHIPLEY, M.D.

Physiology and Anatomy—By Greisheimer, Esther M., *Professor of Physiology, Temple University School of Medicine*. J. B. Lippincott Co., Philadelphia. 1950 6th Edition. 478 pages, illustrations 52 in color. \$4.00.

This standard textbook of Physiology and Anatomy designed especially for the use of students in schools of nursing has been extensively revised in this Sixth Edition. The chapters on the blood, endocrine glands and the muscular system have been modernized to include the more recent developments in these fields.

Summaries at the end of each chapter add considerable value to this text and afford practical applications of the principles of physiology and anatomy. The illustrations are simple and to the point. Many valuable tables have been collected and greatly add to the usefulness of this text. A brief but pertinent glossary adds also to the value of this book.

Perhaps some less detail in anatomy and certainly omission of some definitely debatable problems of physiology would seem advisable. This is a good text for nurses and an excellent reference text for teachers.

DR. E. RODERICK SHIPLEY, M.D.

MEDICAL SCHOOL SECTION

RECEIPT OF SECOND DISTRIBUTION FROM NATIONAL FUND ACKNOWLEDGED

The School of Medicine has received and acknowledged the second distribution for the current year from the National Fund for Medical Education. A check totalling \$6,698 has been recently received by Dr. H. Boyd Wylie, Dean. This check includes funds contributed since the previous announcement of the \$15,000 distribution and in addition those funds which were earmarked by the physicians who contributed to the national Fund for Medical Education sponsored by the American Medical Association.

With this latest distribution the total received by the School of Medicine from the National Fund for Medical Education during the current year amounts to \$21,000. This very generous sum is evidence of the increasing interest by physicians and laymen in problems of medical education.

At a recent conference in Chicago it was noted that in any large University the School of Medicine has become the most expensive unit to operate. At the present time between 6 and 7 per cent of the university enrollment is using about 38 per cent of the total budget. It becomes therefore, increasingly evident that outside assistance is necessary.

Have you contributed to the American Medical Association Medical Education Foundation?

PROGRESS NOTE V

From all outward appearances the Psychiatric Unit of the School of Medicine is now complete. The interior is rapidly nearing completion and according to projected plans, occupancy should begin in the early summer and the Unit should be in full operation by the beginning of the 1952-53 school year.

The Bulletin will carry details of the program for the opening ceremonies. We hope to publish soon a series of photographs of the interior of this new addition to the School of Medicine.

TELEVISION PROGRAM

Through the courtesy of one of the Baltimore television stations, WBAL-TV, and in cooperation with the Schools of Pharmacy, Dentistry and Nursing, the School of Medicine has been engaged in the presentation of a regular weekly program which is telecast at 10 P.M. each Tuesday evening.

These programs under the direction of Mrs. Anne Holland of the WBAL-TV staff have been well received. Recently, Dean Wylie appointed a committee of the Faculty to study and develop a policy for future television programs. This committee is headed by Dr. Howard M. Bubert.

MEDICAL LIBRARY NOTES

During the interval from November 1, 1951 through January 31, 1952, the following persons made gifts of medical books and periodicals to the library:

Dr. Conrad Acton	Dr. Richard Mudd
Dr. Edwin K. Ballard	Dr. William T. Muse
Dr. V. V. Brunst	Dr. Maurice C. Pincoffs
Dr. Samuel S. Glick	Mr. Herbert A. Richer
Dr. Frank W. Hachtel	Dr. Eduard Uhlenhuth
Dr. Walter Johnson	Dr. H. Boyd Wylie

Several years ago, at the request of Dr. Richard D. Mudd, the Medical Library cooperated with Dr. Mudd in his compilation of the Mudd family genealogy. The library has now been rewarded by a gift of the handsome volum *The Mudd Family of the United States* with a special section devoted to the "medical Mudds." In the more than three hundred years of the Mudd family in this country, there have been thirty-nine physicians in direct line. Of greatest interest to the library is the fact that nine of these physicians were graduates of the School of Medicine, University of Maryland; the earliest in 1827, the most recent in 1894. The gift volume is inscribed by Dr. Richard D. Mudd as follows:

This book is donated to the Library of the School of Medicine, University of Maryland in honor and memory of my father Dr. Thomas Dyer Mudd (class of 1894) and his father Dr. Samuel Alexander Mudd (class of 1856) by the author.

PRESENT STATUS OF ANIMAL RESEARCH LAWS

The legal status of animal research in the United States is illustrated in map form in a new booklet recently published by the National Society for Medical Research entitled *Expediting Medical Progress*.

The map shows which states now provide for the use of unclaimed animals in scientific studies; which states provide definite legal recognition of animal experimentation; and states with laws limiting biologic research. Also indicated are those cities which provide for the use of unclaimed pound animals in scientific studies.

Four states (Minnesota, Wisconsin, South Dakota and Oklahoma) and 27 cities now have specific laws or ordinances which save otherwise doomed pound animals for research use. Three states (Maine, Massachusetts and Pennsylvania) now have laws which limit biologic research. Fifteen states provide legal recognition of animal experimentation and 26 are without either law or recognition in this respect.

The book outlines the barriers to medical progress that have been promulgated by various anti-medical research groups, and describes the ways in which these barriers have been broken down through the program of the National Society for Medical Research.

Copies of the booklet may be obtained from the Society's headquarters, 185 N. Wabash Ave., Chicago 1, Illinois.

NATIONAL FUND FOR MEDICAL EDUCATION STILL ACTIVE

The National Fund for Medical Education was recently presented with a check for \$25,000, a donation from the Union Carbide and Carbon Corporation. Of particular interest is the boost given the Fund by the National Association of Manufacturers which recently passed a resolution urging all business men to support "demonstrably sound" organizations like the National Fund for Medical Education.

The American Medical Association supports a separate fund which gives a subsidiary of the National Fund for Medical Education. This fund, the American Medical Education Foundation will receive your contribution for medical education.

Please make checks payable to American Medical Education Foundation and mail to the above at 535 North Dearborn Street, Chicago 10, Illinois. Contributions are tax deductible. Contributions can be allocated to the medical school of your designation. *SUPPORT MEDICAL EDUCATION NOW*.

MERCY HOSPITAL NEWS

Post-Graduate Committee Appointed

The Board of Governors recently appointed a Committee to investigate and revise Post-Graduate education at Mercy Hospital. Dr. William L. Garlick was made Chairman, while Doctors Henry J. Marriott, Edward R. Dana, Patrick C. Phelan, Gerald A. Galvin, James J. Nolan, William A. Dodd, Harry McB. Beck, James Russo and Harold P. Biehl were included in the Committee. Doctors Garlick, Dana and Marriott are serving as an active Executive Subcommittee. Much has already been achieved and many recommendations have been made to the Board of Governors. It is hoped that by July 1, 1952, many substantial changes towards improvement will have been made in the educational curriculum.

Chest Conference Announced

During recent months a popular innovation in the Mercy schedule has been a Chest Conference every Thursday from 4 to 5 P.M., planned and directed by Dr. William L. Garlick. These meetings have been well attended and much enjoyed. The theme of these conferences has been the correlation of medical and surgical chest diseases with their radiologic appearances.

Dr. Charles E. Brambel, Chief of Biochemistry, took part in the annual Macy Conference on blood clotting in New York City, January 21 and 22. Dr. Brambel also delivered a paper entitled *Anticoagulants, Their Control and Counteraction*, at the February 5th Meeting of the Subcommittee on Cardiovascular Diseases of the Division of Medical Sciences, National Research Council, Washington, D. C.

Resident Staff News

Dr. Jenö Baumann completed his rotating internship at Mercy on February 11, 1952.

Dr. Pomeroy Nichols, Jr. completed his 6 months' residency as Junior Assistant Resident in Neurosurgery on January 31, and was replaced by Dr. George W. Smith, Senior Assistant Resident in Neurosurgery who will train at Mercy until June 30, 1952.

Recent Appointments to the Resident Staff

(July 1, 1952 to June 30, 1953)

SURGERY

Clyde D. Thomas, Jr., M.D., Resident Surgeon
Mier Bizer, M.D., Associate Resident Surgeon
Leonard G. Hamberry, M.D., Senior Assistant Resident Surgeon
William B. Rever, Jr., M.D., Senior Assistant Resident Surgeon
Robert A. Moore, Jr., M.D., Junior Assistant Resident Surgeon
Juan Z. Niccoli, M.D., Junior Assistant Resident Surgeon
Frank A. Faraino, M.D., Resident in Thoracic Surgery

MEDICINE

Charles R. Ireland, M.D., Resident Physician
Genevieve M. Tirrell, M.D., Assistant Medical Resident

GYNECOLOGY AND OBSTETRICS

Arthur R. Fleming, M.D., Resident Gynecologist
Rudolph M. Zander, M.D., First Assistant Resident in Gynecology and Obstetrics
Edward M. Barczak, M.D., Second Assistant Resident in Gynecology and Obstetrics

LUTHERAN HOSPITAL ANNUAL SYMPOSIUM

The Annual Medical and Surgical Symposium sponsored by the Medical Association of the Lutheran Hospital of Maryland was held on Saturday, May 3, 1952 in the auditorium of the Nurses' Residence. The scientific program included Dr. George T. Pack of New York who spoke on *Extension of Radical Surgery in the Treatment of Cancer*; Dr. Theodore P. Eberhard of Philadelphia, *Radiation Therapy in Cancer*; Dr. John Parks of Washington, D. C., *Endocrine Therapy*; and Dr. Garfield G. Duncan of Philadelphia, *Practical Considerations in the Management of Diabetes*.

A banquet and the celebrated Interns' Frolic followed in the evening at the Sheraton-Belvedere Hotel.

PATHOLOGIC CONFERENCE NOW IN CURRENT MEDICAL DIGEST

Attention is called to a recent inclusion of Clinico-Pathologic Conferences from the Bulletin of the School of Medicine in the monthly magazine, Current Medical Digest. This monthly medical journal distributed to nearly every physician in the United States has been published for almost 20 years and is currently issued by the Williams and Wilkins Company, Baltimore, Maryland. Mr. William J. Wiscott, recently named managing editor, has completely revised the publication and has made some valuable additions.

PHI DELTA EPSILON LECTURE

The Phi Delta Epsilon lecture for 1952 was held on March 18, 1952 at Chemical Hall. Dr. Paul C. Aebersold, Chief of the Isotopes Division of the U. S. Atomic Energy Commission spoke on "The Atomic Radiation Effects on Human Tissue and the Therapeutic Uses of Isotopes."

MARYLAND SOCIETY FOR MEDICAL RESEARCH

Dr. Dietrich C. Smith of the School of Medicine has continued the activities of the Maryland Society for Medical Research in cooperation with Mr. G. Van Velsor Wolf as President. This Society, organized in 1950, launched an educational program which includes the publishing of a *Quarterly Bulletin*, carrying news of the Society's activities. Programs have been offered by Dr. H. Patterson Mack, Associate in Anatomy, Dr. Milton Sacks and by other cooperating speakers who have lectured at High School Assembly meetings and at various club functions. Quite recently the Society completed a film on the various activities, this film being available for showing to lay and scientific groups upon application through the Secretary, Dr. Dietrich C. Smith, Department of Physiology of the School of Medicine.

DEPARTMENT OF OBSTETRICS

JOINT RESIDENCY ANNOUNCED

The joint announcement was recently made by the Departments of Obstetrics and Gynecology concerning residency training programs in obstetrics and gynecology.

Beginning July 1, 1952, a combined training program in obstetrics and gynecology will be offered in lieu of the heretofore separate training program. The experience and instruction thus afforded candidates under this joint cooperative program will bring the scope of the post graduate training much more in line with the requirements of the American Board of Obstetrics and Gynecology. The training programs will continue to be of 4 years duration and will be carried on at a high level somewhat in excess of the minimum requirements for Board certification.

Dr. Louis H. Douglass, Professor of Obstetrics, presented a paper entitled *Prolonged Labor* at the meeting of the Southern Assembly of the International College of Surgeons held in Birmingham, Alabama on February 16th.

Dr. John K. B. E. Seegar is Chief of the Department of Obstetrics at the South Baltimore General Hospital.

The President of the Staff of the Maryland General Hospital has recently announced the appointment of Dr. D. McClelland Dixon as Chief of Obstetrics.

Dr. Hugh B. McNally of the Department of Obstetrics is chief of this division at the Bon Secours, St. Agnes and St. Joseph's Hospitals in Baltimore.

Dr. J. Morris Reese, Associate Professor of Obstetrics, addressed the Clarksburg (West Virginia) Medical Society on February 7, 1952, his topic being "The Toxemias of Pregnancy and Methods of Treatment."

DEPARTMENT OF SURGERY

Members of the Surgical Department of the University Hospital presented papers before the Centenary celebration of the birth of William Stewart Halsted at the Johns Hopkins Hospital on February 6-9, 1952. This celebration was held in conjunction with the Meetings of The Society of University Surgeons, The Society of Clinical Surgery and The Halsted Club in commemoration of the 100th anniversary of Dr. Halsted's birth. On February 6, 1952, at a session presided over by Dr. C. R. Edwards, the following papers were presented.

The Treatment of Aneurysms with Polythene, Dr. R. Adams Cowley

The Henry Approach to the Repair of Femoral Hernia, Dr. Harry C. Hull

The Effect of "Cortone" in the Prevention of Intestinal Adhesions, **Dr. William S. Lynn**

A New Type of Pull-Out Sutures for Tendon Repair, **Dr. Erwin R. Jennings**
Intestinal Antibacterial Agents, **Drs. E. Roderick Shipley, Ganey, Mansberger and Yeager**

On February 7, 1952, **Dr. Arthur M. Shipley**, Professor Emeritus of Surgery presented a very excellent paper entitled "*Personal Glimpses of Dr. Halsted.*"

Dr. E. P. Smith, Jr. will begin a Fellowship in Surgery at the Lahey Clinic in Boston on July 1, 1952.

Dr. John E. Evans has received an appointment as Voluntary Fellow in Surgery at the Lahey Clinic in Boston beginning July 1, 1952.

DEPARTMENT OF NEUROSURGERY

Dr. Robert H. Oster has recently been elected as a full member of the Eastern Association of Electroencephalographers.

Dr. Robert M. N. Crosby who has been associated with Dr. Douglas Buchanan at the University of Illinois during the past year will return to Baltimore in July, 1952 where he will begin practice of neurologic surgery.

Dr. Jose A. Alvarez-Choudens who will complete his residency in neurologic surgery at the University Hospital this year will enter practice in San Juan, Puerto Rico.



FIRESIDE



GARDEN

MEET THE EMERITI

Many Alumni of the School of Medicine remember a chair and fireplace on quiz nights when they, as students, faced this chair and its occupant, now Emeritus Professor of Surgery, Arthur M. Shipley.

Several years of retirement have afforded Dr. Shipley the opportunity for many erstwhile prohibited activities including advanced phases of flower gardening and recreational travel.

The Bulletin reports that Dr. Shipley is as enthusiastic as ever, that he continues his active interest in the School of Medicine and in the many Alumni who are his friends and former students. He still lives at his old address, 507 Edgevale Road, Baltimore.

DEPARTMENT OF PHARMACOLOGY

Dr. John C. Krantz, Jr., Professor of Pharmacology, recently served on the Faculty of the American Academy of General Practice held in Atlantic City, March 24 through the 27th.

Dr. Krantz spoke on "Recent Advances in Medical Therapy."

DEPARTMENT OF UROLOGY

Residency in Urology Receives Approval

Following a recent inspection of the post graduate training provided by the Committee on Education of the American Medical Association, the Department of Urology at the School of Medicine has been approved for training in urology as required by the Certifying Board. As presently constituted, the residency training program under the supervision of Dr. W. Houston Toulson, Professor of Urology, covers a period of three years.

DEPARTMENT OF PEDIATRICS

Annual Pediatric Seminar Announced**FIRST SESSION TO BE HELD ON SUNDAY, MAY 11, 1952**

The Department of Pediatrics has announced the first of a series of annual pediatric seminars which will be held beginning 10 A.M., Sunday, May 11, 1952. All sessions will be held in the Gordon Wilson Amphitheatre, University Hospital, Baltimore.

The program is as follows:

Certain Pediatric Aspects of Infant Feeding—**Dr. Preston A. McLendon**, Professor of Pediatrics, Georgetown University

Common Pediatric Surgical Conditions—**Dr. C. Everett Koop**, Surgeon-in-Chief, The Children's Hospital of Philadelphia

Behavior Problems Associated with Feeding—**Dr. Harry Balwin**, Professor of Clinical Pediatrics, New York University-Bellevue Medical Center

Office Management of the Allergic Infant and Child—**Dr. Jerome Glaser**, Assistant Professor of Pediatrics, University of Rochester

This seminar will replace the customary monthly pediatric meetings.

DEPARTMENT OF PHYSIOLOGY

Resignation

Dr. J. McCullough Turner, Associate Professor of Physiology, has submitted his resignation to take effect on June 30, 1952. Dr. Turner plans to return to New Haven, Connecticut where he has many personal friends and professional interests.

Research is continuing in the Department in the field of the chemistry and histology of skeletal muscle. This work is supported by a grant from the U. S. Public Health Service. In the present year the work has proceeded with the aid of Dr. John I. White and Dr. Annamarie Weber, U. S. Public Health Service Fellows in Physiology.

Dr. Dietrich C. Smith and Dr. Frederick P. Ferguson are continuing their research on the effects of acute decompression stress upon water and electrolyte distribution and renal function on dogs. This project is being supported by a grant from the Frank C. Bressler Reserve Fund of the School of Medicine.

Several members of the Department have been participating in the Post-Graduate Course on Basic Sciences as They Apply to the Practice of Medicine. Dr. Dietrich C. Smith discussed the physiologic aspects of the various types of heart diseases; Dr. Frederick P. Ferguson spoke on renal function; and Dr. J. McCullough Turner described respiratory activity.

DEPARTMENT OF ROENTGENOLOGY

Beginning November 1, 1951, plans were instituted to more adequately furnish 24 hour service, 7 days a week, from 8:30 a.m. until 9:00 p.m. Roentgen-ray technicians are on duty using a $7\frac{1}{2}$ hour shift system. Two second year medical students now cover the period between 9:00 p.m. and 8:00 a.m. This innovation has afforded the students an excellent opportunity to participate in clinical medical problems early in their medical education, and has given them an introduction to one of the indispensable specialties. The Sunday period will be covered by a technician when necessary. This has released residents from duties other than those necessary for their training in this phase of roentgenology and poses as an answer to the long standing criticism of hospitals for the use of house officer personnel as cheap labor for routine work.

A projector has been obtained for demonstrating roentgenographs to classes and clinics. This has been an asset to the teaching armamentarium and has met with universal acclaim and approval. An attempt to construct a projector by Mr. William G. Harne of the Department of Pharmacology for use in the medical school has been partially successful.

A Sanchez-Parez seriograph has recently been purchased and alterations are now in progress in the 7th floor Roentgen-ray room for adaption of this apparatus to the present roentgenographic machine. The seriograph will allow the automatic rapid production of roentgenographs necessary in obtaining angiocardiograms, venograms and arteriograms.

The recent installation of a water cooler and wash tank in the out-patient processing room will provide constant temperature and better washing facilities in the processing of films.

DEPARTMENT OF DERMATOLOGY

Members to Attend National Congress of Dermatology

Members of the Department of Dermatology headed by Dr. Harry M. Robinson and including Drs. Francis E. Ellis and Harry M. Robinson, Jr. will represent the University of Maryland School of Medicine at the 10th International Congress of Dermatology to be held in London, England during July, 1952. Drs. Robinson and Ellis will present papers and Dr. Robinson, Jr. will present an exhibit.

Members of the Department of Dermatology will also participate in the Southern Medical Association Convention at Miami, Florida in November, 1952 and at the American Academy of Dermatology and Syphilology to be held in December of the same year.

AWARDS

At the meeting of the American Academy of Dermatology and Syphilology held in Chicago on June 10, 1951, Dr. Harry M. Robinson, Jr. and Dr. Eugene S. Berenson won the second prize for original work. The title of the exhibit was "The Physiology and Pathogeneses of *Microsporon Audouinii*." Dr. Frank H. Figge, Professor of Anatomy, collaborated in the production of this work. These three members of the faculty will present the results of their completed work at the meeting of the American Medical Association in Chicago in June, 1952. Dr. Francis A. Ellis has been appointed to the Board of Directors of the Academy.

UNIVERSITY HOSPITAL STAFF MEETING

ABSTRACTS OF PAPERS TO BE CARRIED REGULARLY BY BULLETIN

With the inauguration of a new series of staff meetings at the University Hospital emphasis will be placed on original research and reviews of particularly important subjects. The program committee has kindly consented to furnish the Bulletin with abstracts of these papers which will appear shortly after they have been presented. The abstracts of these scientific papers will be presented by the Bulletin without comment. The first program which was presented on February 21, 1952 is listed below.—Ed.

(ABSTRACT)

CHLORAMPHENICOL IN THE TREATMENT OF PNEUMONIA: A COMPARISON WITH PENICILLIN

Ebeling, W. C., M.D.; Parker, R. T., M.D.; Hagan, R. C., M.D.; Cohen, J. E., M.D.; Bennett, V. B., M.D. (by invitation): Introduced by Theodore E. Woodward, M.D. From the Section of Infectious Diseases, Department of Medicine, School of Medicine, University of Maryland, Baltimore, Maryland. Paper presented by Dr. Parker.

In many respects the clinical features of the bacterial, rickettsial, and certain viral types of pneumonia are similar and may mask the specific underlying etiology unless laboratory techniques are utilized. The remarkable effectiveness of penicillin in pneumococcal pneumonia is well known although its usefulness in pulmonary infections caused by bacteria other than the Gram positive group

is extremely limited. Chloramphenicol is effective in the Richettsioses, in infections of Gram negative origin with pulmonary manifestations, i.e.: *B. tularensis*, *H. influenza*, and *K. pneumonia*. Patients with non specific primary atypical pneumonia and psittacosis have yielded to its action. If chloramphenicol, like penicillin cures pneumococcal pneumonia, it becomes apparent that the medical therapist possesses an agent of wide range when confronted with the problem of acute pulmonary infections.

The results of therapy in 34 patients receiving chloramphenicol and 32 patients given penicillin are presented. *D. pneumoniae* were isolated from the upper respiratory tract of each case and pneumococcal bacteria occurred in approximately 15 per cent. In order to define the etiologic significance of certain viral agents the following tests were performed: complement fixation for Q. fever and psittacosis, the agglutination inhibition test for influenza A. B. and A', the cold hemagglutination and streptococcus MG agglutination tests. Approximately 10 per cent showed evidence of a second factors as a cause of the disease other than *D. pneumoniae* isolated from the sputum or blood stream.

Mean values for a day of disease on which treatment began were chloramphenicol 3.5, and penicillin 5.0. After 24 hours of therapy 79 per cent of the chloramphenicol and 75 per cent of the penicillin treated cases had normal temperatures. The incidence of fatality (one case in each group), bacteremia and complications were similar in both groups. Mean values for the duration of therapy and total dosage of penicillin and chloramphenicol were 9.7 days and 3.2 million units, and 7.6 days and 24.1 grams, respectively.

(ABSTRACT)

TREATMENT OF TYPHOID FEVER WITH ANTIBIOTICS

Woodward, T. E., Smadel, J. E., Parker, R. T., and Wissman, C. J. From the School of Medicine, University of Maryland, Baltimore, Maryland and The Army Medical Service Graduate School, Washington, D. C.

The value of chloramphenicol in arresting the acute manifestations of typhoid fever has been demonstrated by numerous investigators whereas, aureomycin, terramycin and polymixin have been shown to be considerably inferior. Despite the benefit attributable to chloramphenicol, several problems remain unsolved: (1) *S. typhosa* are shed in the feces for variable periods of time, (2) relapses occur in approximately 20 per cent of treated cases, and (3) the common complications of intestinal perforation and hemorrhage have not been eliminated and continue to present problems of management.

The authors summarize their experience in 58 patients treated with chloramphenicol and present the results obtained in treating typhoid fever with chloramphenicol combined with cortisone. Administration of cortisone with the antibiotic has appreciably shortened the duration of fever and toxic signs of the disease.

A review of the recent literature relative to the incidence and management of relapses, intestinal hemorrhage and perforation is presented. The relationship of the clinical response and complications to the stage of disease at which therapy is first instituted, the duration of therapy, the interval of therapy, and other ancillary aids is discussed.

(ABSTRACT)

CORTISONE AS AN ADJUNCT TO CHLORAMPHENICOL IN THE TREATMENT OF ROCKY MOUNTAIN SPOTTED FEVER

Workman, J. B., M.D.; Hightower, J. A., M.D.; Borges, F., M.D.; Furman, E., M.D.; Parker, R. T., M.D. (by invitation). Introduced by Theodore E. Woodward, M.D. From the Section of Infectious Diseases, Department of Medicine, School of Medicine, University of Maryland, Baltimore, Maryland. Paper presented by Dr. Parker.

The efficacy of chloramphenicol in the therapy of Rocky Mountain spotted fever is well documented. However the febrile period following institution of specific therapy has ranged from 2.5 to

4.0 days. The problem of the severely ill patient exhibiting dehydration, hypochloremia, hypoproteinemia and peripheral vascular collapse remains. The search for an additional therapeutic agent capable of alleviating some of the toxemia of late cases has led to the use of adrenal cortical hormones as an adjunct to antibiotic therapy.

Results of combined chloramphenicol-cortisone therapy in 9 cases of Rocky Mountain spotted fever, 3 of which were classified as late cases, are presented. Diagnosis was based upon the typical history and physical findings of the disease and demonstration of a rising or significantly elevated titer for *Proteus* agglutinins and specific complement fixing antibodies. Therapy consisted of oral chloramphenicol (Chloromycetin—Parke Davis) in doses of approximately 50 mg./kilo./day and was continued until patients had been afebrile for 48 hours. Cortisone (Cortone—Merck) was administered orally or intramuscularly in an initial dose of 200 mg. followed by two 100 mg. doses at 6 hour intervals. Children received approximately two-thirds the adult dose. In no instance did the total dose of cortisone exceed 400 mgm. or did the period of administration exceed 12 hours. No untoward side effects from corticoid therapy were noted.

On an average, therapy was begun on the 6th day of disease and the mean duration of fever after institution of combined therapy was 1.7 days. The striking effect of combined therapy was manifest by rapid alleviation of headache and toxicity with a return of appetite and sense of well being within a 24 hour period.

Routine use of cortisone is not indicated in the treatment of Rocky Mountain spotted fever. The combination of antibiotic and excellent supportive therapy is mandatory in the treatment of patients first observed late in the course of the disease. Furthermore, the results of corticoids in this limited series of patients, warrants further clinical testing.

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WELCOME

It is with pleasure that we welcome the advent of the *Maryland State Medical Journal*, official publication of the Medical and Chirurgical Faculty of the State of Maryland. For many years, in the opinion of many, the need for such a medium to bind together the members of the Faculty has been great. We believe that the Editorial Board, under the able and vigorous leadership of Dr. George Yeager, Editor, will create a periodical of great value to the profession in Maryland. All Maryland physicians are urged to heed Dr. Yeager's plea:

"... lend your support. Read it! Criticize it! Help make it worthwhile! If you are willing to include it as essential reading to your professional way of life, then it must succeed."

Best of luck!

SEMINARS ON MEDICOLEGAL NEUROPATHOLOGY

The Office of the Chief Medical Examiner of Maryland announces that seminars on Medicolegal Neuropathology are being held every Thursday evening from 8:00-10:00 o'clock at the Office of the Chief Medical Examiner, 700 Fleet Street, Baltimore. These seminars are conducted by Dr. Richard Lindenberg, Director of Neuropathology and Legal Medicine of the Maryland State Department of Mental Hygiene and Consulting Neuropathologist to the Office of the Chief Medical Examiner.

The more interesting cases recently received at the Medical Examiner's Office are presented and discussed with attention to their medicolegal as well as to their clinical implications. Mechanical trauma, circulatory disturbances, poisonings, and various space consuming processes are among the principal topics which are being considered.

These seminars are conducted on a postgraduate level. Every interested physician is cordially invited.

AUDIOVISUAL PROGRAM

Doctors Louis Krause, Frank Figge, and John C. Krantz, Jr., members of a subcommittee appointed by the Chairman of the Post Graduate Committee, have made a survey of the latest advances in audiovisual possibilities as applied to medical practice, research, and teaching. These appear to be almost limitless. The subcommittee has invited Dr. Davis S. Ruhe, Director of the Medical Audiovisual Institute

of the Association of American Medical Colleges, to present his views to the general Post Graduate Committee.

Further, this subcommittee is endeavoring to secure many of the new and useful films, representing various advances in medical practice, for distribution to the hospitals and county medical societies of the State. As the films are assembled in this library, notice will be sent to the county medical societies and hospitals where it is believed an interest will be manifested in their showing.

It is of special interest to all University of Maryland graduates that in conjunction with Station WBAL-TV, the professional schools of this University have launched a program on Tuesday evenings at 10:30. This is a public information program regarding the activities of the professional schools of the University of Maryland in Baltimore. In the course of these telecasts, it is expected that the Post Graduate Committee, as such, will present a program illustrating the dissemination of advanced medical knowledge to the county medical societies through the Post Graduate program of the University of Maryland, School of Medicine.

RESIDENT TRAINING—OBSTETRICS AND GYNECOLOGY

The Post Graduate Committee takes pleasure in announcing a combined obstetric and gynecologic resident training program at the University Hospital.

The failure to offer the above type of training, as required by the American Board of Obstetrics and Gynecology, has long made it difficult for these departments of the University Hospital to attract residents who desire this combined training, necessary to meet the board requirements.

The proposed plan under the new program is of excellent content and quality. While the major portion of the training will be given in the University Hospital, it is expected that the University affiliated hospitals may be used to broaden its scope.

Dr. Louis Douglass and Dr. J. Mason Hundley, heads of the respective Departments of Obstetrics and Gynecology, are to be congratulated on their cooperative efforts with the Post Graduate Committee in creating such an attractive and valuable residency.

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The names listed above are officers for the term beginning July 1, 1951 and ending June 30, 1952.

PRESIDENT'S LETTER

Once again the administration in Washington is setting the nation's feet on the path to the socialization of medicine. On December 29, 1951, the President signed an executive order creating his Commission on the Health Needs of the Nation. No high-sounding title can camouflage its true objective.

The President in his statement says: "The provision of adequate health care for all of our population must be a matter of national, as well as local, concern. It is particularly important that in this world crisis we should seek to limit the drain upon our strength through illness and death."

The administration would have the public believe that the nation's health is in the worst possible state. They take the attitude that no improvement of medical care can be accomplished without government intervention—that the government can furnish better and cheaper medical care. Has government medicine in Great



Photo: Fabian Backrach

Dr. D. J. Pessagno

Britain, Italy, Russia or Japan been successful? For years non-medical planners in Washington have been working behind the scenes to capture American medicine and this is their latest attack.

The President has created a 15-man commission headed by Paul B. Magnuson, M.D., deposed head of the Veterans Administration, and according to Mr. Truman, each member of the commission was recommended by Dr. Magnuson and "everyone of the fourteen members had indicated a willingness to serve prior to the public announcement of the establishment of the commission."

Dr. Gunner Gundersen, a member of the Board of Trustees of the American Medical Association, had been named by the President to serve and at once vehemently denied that he had given his approval. He stated: "I believe I am correct in assuming that the commission is designed both in its majority membership and in its objectives, as an instrument of practical politics, to relieve President Truman from an embarrassing position as an unsuccessful advocate of compulsory health insurance. I certainly cannot subscribe to such a masquerade, and today have requested that my name be removed from consideration as a commission member."

Each member serving on the commission cannot be criticized, for certainly in the list are many able men who believe, in all sincerity, they will best serve the nation's health interests.

However, a study of the list reveals the name of Dr. Dean Clark, general director of the Massachusetts General Hospital of Boston. For many years, Dr. Clark has worked closely with those who would promote a compulsory Social Security medicine program. He sponsored Davis' *Principles of a Nation-wide Health Program* used by Senator Wagner in his work. Clark has worked along with Falk, Perrott, Harry Becker and all the other nationalizers. His name on the list immediately makes the commission suspect.

Another name listed is that of A. J. Hayes, president of the International Association of Machinists. He has testified in favor of House bills introduced by Dingell and Biemiller for compulsory Social Security medicine.

Elizabeth S. Magee, another of the President's appointees, at Ewing's National Health Assembly, joined thirteen other nationalizers in an attempt to put over a resolution for "national health insurance."

The President also stated he selected the members only on condition they would approach each problem with an open mind. A glance at the names mentioned above gives us a fair idea as to what impartiality can be expected.

The one-year tenure of this commission is too limited a period of time to survey the broad field designated by Truman. Certainly the President has shown excellent timing in announcing the establishment of his commission*for the year 1952—an election year. When the subject of socialized medicine is raised in the present political campaign, Truman and his Congressional supporters can avoid the issue by insisting that this problem is being studied by an unbiased and non-political group, presenting added proof that once more the administration is playing politics with the medical welfare of the nation.

Apparently, Truman is unaware of the progress made by the medical profession in safeguarding and improving the nation's health. He is attempting to convince the

American public that they are in the midst of a great national health emergency and their only recourse is to put the problem in the hands of the government. The increased enrollment in voluntary health insurance groups would indicate that the nation is not so gullible as to believe government help will resolve the health problems of today.

Dr. John W. Cline, President of the American Medical Association, in answer to the President made the following statement:

"It seems almost incredible that in the face of all these facts, emergency defense funds should be allocated to a gigantic health survey that cannot possibly achieve its aims in the time allotted, is not necessary, and is so palpably political in its design."

All of us should leave no doubts in the minds of Congress as to how we feel about this latest move of the administration to socialize the medical profession.

Daniel J. Pessagno, M.D., President

ANNOUNCEMENT OF ALUMNI DAY ACTIVITIES, 1952

PRE-COMMENCEMENT EXERCISES AND BANQUET TO BE COMBINED

Dr. Daniel J. Pessagno, President of the Medical Alumni Association, has recently announced the plans for Alumni Day which will be held on Thursday, June 5, 1952 and which this year for the first time will combine the activities of the Pre-Commencement which will take place concurrently with the annual alumni banquet.

The program will get under way with registration at 9 A.M., registration desks being available both in the main foyer of the University Hospital and at the Alumni Office in the Gray Laboratory building. The scientific session will be held from 10 A.M. to 12 noon in Gordon Wilson Hall. This will be followed by the presentation of the Alumni Honor Award to Dr. Louis A. Buie, class of 1915. Following the conclusion of Dr. Buie's address which will be entitled "The Fruit of Loyal Nature and of Noble Mind," an informal luncheon will be served those present. Following this the annual business meeting of the Alumni Association and election of officers for the year 1952-53 will conclude the early afternoon program.

A number of the reunion classes (1947, 1942, 1937, 1932, 1927, 1917) have indicated their plans for reunion programs such as cocktail parties and special events.

<i>Class</i>	<i>Chairman</i>
1947	William R. Post
1942	J. Howard Franz E. R. Shipley
1937	C. Parke Scarborough
1932	John E. Savage
1927	Frank K. Morris C. W. Peake Nelson Carey Herbert Reifschneider Byruth K. Lenson-Lambros A. H. Finkelstein
1917	Frank N. Ogden

The annual Alumni banquet will be held at 7 P.M. at the Lord Baltimore Hotel. At this time the class of 1952 will be received into the Alumni Association. For the first time the School of Medicine will combine the Pre-Commencement program with the Alumni banquet. The 50 year graduates, the class of 1902, will be honored with the presentation of their 50 year service diplomas. Dean Wylie will also present special awards to the honor graduates of the class of 1952 and the members of the Student Council. Other honors will also be conferred upon the class at this time.

This year's banquet promises to be one of the largest ever. As customary, the complete program will be mailed to each Alumnus prior to the Alumni Day activities.

LOUIS A. BUIE TO RECEIVE ALUMNI HONOR AWARD FOR 1952

Early this year the Board of Directors of the Medical Alumni Association announced the nomination of Dr. Louis A. Buie of the class of 1915 as the recipient of 1952 Alumni Honor Award and gold key "**for outstanding contributions to medicine and distinguished service to mankind.**" Dr. Buie, the fifth recipient of this outstanding honor, will receive the award at the Alumni Day activities on Thursday, June 5th, 1952 and will address the Medical Alumni Association on the topic "The Fruit of Loyal Nature and of Noble Mind."

Dr. Buie, born on July 30, 1890 at Kingstree, South Carolina, received his preliminary education at the University of South Carolina. He was graduated from the School of Medicine of the University of Maryland in 1915. He then became resident in surgery at the University Hospital and later was in charge of the Kernan Hospital in Baltimore. In 1917 he joined the Mayo Foundation as a Fellow and through the Foundation and the University of Minnesota rose to the rank of Professor of Surgery (proctology) in 1935. He became Chief of the Department of Proctology at the Mayo Clinic in 1919, and has since been responsible for much of its development which now makes it one of the outstanding departments of the Clinic being noted for its high standards of efficiency. During World War I he served as a 1st Lieutenant in the Medical Corps of the United States Army and for his service in Northern Italy he received La Croce al Merito di Guerra from the Italian Government.

Dr. Buie's activities in medical societies have been numerous and he has served as Chairman or President of many of them. He is a past President of the American Proctologic Society and Secretary of the American Board of Proctology. He is the author of a widely used textbook of proctology and in addition is well-known for the invention of numerous instruments including the Buie proctologic table, the development of intra-rectal photographic techniques, the electro-surgical treatment of polyps of the rectum, the Buie clamp and the Buie proctoscope. In 1949 his Alma Mater, the University of South Carolina conferred upon him the degree of Doctor of Science.

At the present time Dr. Buie serves as Professor of Surgery in the Mayo Foundation at the University of Minnesota, Rochester and is Chairman of the Council on the Constitution and By-Laws of the American Medical Association. He is a member of the Judicial Council of the American Medical Association and the Committee on Education and Publications of the National Foundation for Infantile Paralysis,

Inc. He is the author of over 100 articles and several monographs on various medical and surgical subjects principally related to proctology.

Dr. Buie was married on August 19, 1920 to M. Zelma Jones. They have two children, Nancy Louise and Louis Arthur. He is a member of the Rochester, Minnesota Chamber of Commerce and the Nu Sigma Nu Fraternity, Sigma Xi and Phi Beta Kappa.



Dr. Louis A. Buie

CORRESPONDENCE

The Alumni Association
Gentlemen:

I am most proud of and grateful for the very handsome Certificate of Fifty Years of Service.

I am more grateful since I learned that it is customary to receive the certificate in person at the class reunion. The reason for my non-appearance was, as I think I wrote at the time, the graduation exercises of my oldest grand-son.

Gratefully yours,

Ernest H. Johnston, M.D.

Class of 1900

AN OPEN LETTER FROM DR. DREHER

Dear Editor:

After seeing one of the early appeals for contributions to the American Medical Education Foundation, I sent in my contribution because I felt there was no other alternative. There were several very definite facts that influenced me.

1. The medical schools of the country are in need of financial assistance.
2. The medical schools must have this money and they are going to get it somewhere.
3. If the medical profession and its friends do not supply it, some government agency will supply it.

If the National Fund for Medical Education supplies the funds, they can be given to medical schools to spend as they see fit. If the Federal Government supplies the funds, they will in all probability have something to say about how the money is spent and each year there will be more Federal control.

I feel that there is no other choice but to send a yearly contribution to the American Medical Association Foundation.

Very sincerely yours,

Robert H. Dreher, M.D.

This important and timely letter comes from an alumnus of the School of Medicine who was the first physician in the United States to contribute to the American Medical Education Foundation—Ed.

ALUMNI ATTEND SYMPOSIUM

At a recent Symposium held in Cincinnati, Ohio on January 17, 1952, several Alumni of the University of Maryland participated in a discussion which concerned a new type of synthetic estrogen, tri-parapanisylchloroethylene (TACE). On this program were Drs. Henry I. Berman of the class of 1931 and Landon Timberlake of Birmingham, Alabama, class of 1934.

ITEMS

In its regular publication "The Tar Heel Practitioner" a leaflet published by the North Carolina Academy of General Practice, **Dr. Henderson Irwin** of the class of 1912 was recently honored. Dr. Irwin who practices in Eureka, a rural community of Eastern North Carolina, opened his office in 1915 and has served his community continually during the ensuing 33 years. Dr. Irwin has completed somewhat over 5,000 obstetric cases most of them in the home and claims that more than 130 infants have been named for him. He is a past president of the Wayne County Medical Society and has represented his county society in the House of Delegates of

the North Carolina State Medical Society. **Dr. Irwin** is active in public health work and is a member of the American Academy of General Practice.

Dr. Arthur G. Wilkinson, class of 1936, has moved his office for the practice of Gynecology to 111 Sherman Avenue, New Haven, Connecticut.

Dr. Louis J. Pratt, Jr., class of 1944, announces the opening of his office at 8402 Greenway Road, Loch Raven Village, Towson 4 Maryland. Dr. Pratt will engage in the practice of General Medicine.

Dr. Pomeroy Nichols, Jr., class of 1946, currently assistant resident in neurologic surgery will become associated with the Department of Neurosurgery at the University of Georgia on July 1, 1952. Dr. Nichols will assist **Dr. Louis O. J. Manganiello** of the class of 1942 who is currently acting professor of neurosurgery at the University of Georgia.

Dr. Henry F. Maguire, class of 1945, can now be reached at 262 Ilfenfield Avenue, Jersey City, New Jersey. Dr. Maguire is currently completing his residency training in obstetrics and gynecology at the Margaret Hague Hospital in Jersey City.

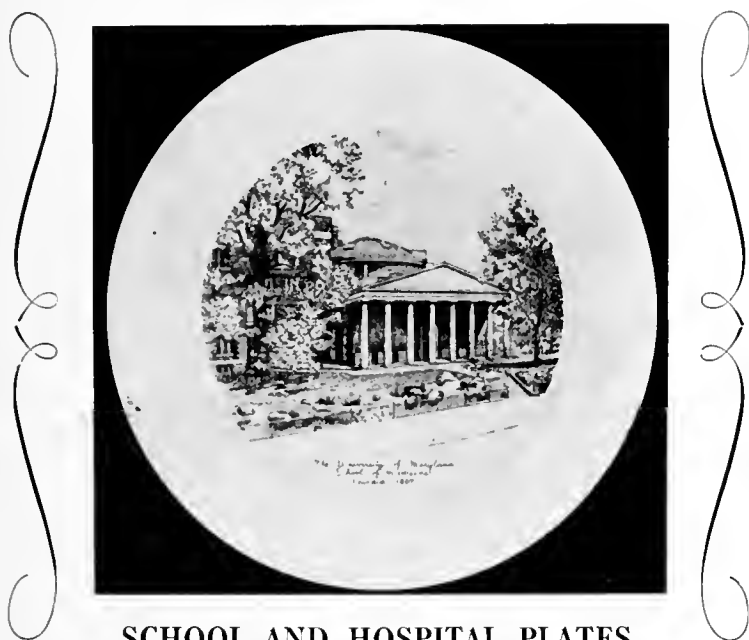
Dr. Nathan B. Hyman, class of 1946, who recently completed his training in radiology and roentgenology has opened his office for the practice of radiology at 1805 Eutaw Place in Baltimore.

Dr. William S. M. Ling, class of 1940, has moved his office to 34 East Seventy-second Street in New York City. Dr. Ling practices internal medicine.

Dr. Jacob J. Weinstein, class of 1936 was recently guest lecturer at the University of Oriente, Santiago, Cuba. Dr. Weinstein spoke on *The Comparison of Intravenous Infusions of Dextrose, Levulose, and Invert Sugar in the Normal Human Being, Tolerance of Postoperative Patients to Rapid Infusions of Dextrose, Levulose and Invert Sugar, The Effect of Intravenous Carbohydrates on Postoperative Nitrogen Metabolism, and A Study of the Physiology of the Utilization of Dextrose, Levulose, and Invert Sugar*. Dr. Weinstein was also a guest of the University of Havana and at several other important Research and Medical Centers in Cuba during his recent visit. Dr. Weinstein is currently associated with the Department of Surgery of the George Washington University School of Medicine and the Department of Surgery at the Gallinger Municipal Hospital. He also maintains an active connection with the Department of Biochemistry of the George Washington University School of Medicine in Washington, D. C. His current address is 900 17th Street, Northwest, Washington 6, D. C.

Dr. Albert Gubnitsky, class of 1943, has recently moved his office to 5415 Park Heights Avenue in Baltimore.

Dr. Charles H. Williams, class of 1942, has been recently elected President of the Baltimore County Medical Association succeeding Dr. Melvin B. Davis. Other officers installed were Dr. Charles F. O'Donnell, class of 1944, Vice-President; Dr. Thomas H. Wheeler, class of 1945, Secretary-Treasurer. Dr. David H. Andrew, class of 1931 and Dr. James Howell, class of 1925, were elected Delegates from the Baltimore County Medical Association to the Medical and Chirurgical Faculty of Maryland.



SCHOOL AND HOSPITAL PLATES

Plates of the School of Medicine, University of Maryland, the new Hospital, and the Old Hospital are available. These white plates are 10 inches in diameter with black print. The price is \$2.50 each, plus 25 cents insurance and postage. Send order, stating the plates desired, with check to Mrs. Bessie M. Arnurius, Box 123, University Hospital, Baltimore, Maryland. Make check payable to NURSES ALUMNAE ASSOCIATION OF THE UNIVERSITY OF MARYLAND.

OBITUARIES

Dr. Hubert C. Knapp

Dr. Hubert C. Knapp, class of 1896, College of Physicians and Surgeons, died at his home on December 31, 1951, aged 79. Dr. Knapp was one of the early resident physicians at the Bayview Hospital (now Baltimore City Hospital) following which he established a general practice. From 1900 to 1917 he taught at the College of Physicians and Surgeons and following the merger of the College with the University of Maryland became interested in the staff of the Mercy Hospital. During World War I he served as Captain in the Army Medical Corps and upon his return became associated with the Medical Department of the Baltimore Transit Company. Dr. Knapp had been retired for some years because of arthritic diseases.

Dr. Harvey G. Beck

Dr. Harvey G. Beck, Professor Emeritus of Clinical Medicine, of the School of Medicine, died on October 30, 1951. Dr. Beck was 81 years of age.

He was born on August 15, 1870 in York County, Pennsylvania. After his preliminary education he attended the University of Maryland School of Pharmacy from



Dr. Harvey G. Beck

which he was graduated. He then entered the College of Physicians and Surgeons from which he was graduated in 1896. For a number of years he was active on the Faculty of the School of Medicine and was one of its first active teachers and investigators along the lines of endocrinology.

Dr. Beck's pioneer work in endocrinology and his avid interest in thorough diagnostic procedures led him to development of a private clinic which he operated until his death. He maintained a continued interest in the problems of endocrinology and was noted for his contributions to the knowledge of orthostatic albuminuria and hypertensive states. He also contributed numerous treatises on the controversial subject of chronic carbonmonoxide poisoning. He was a member and former President of the American Therapeutic Society and a member of the Southern Medical Society as well as the American Hospital Association.

Dr. Arnold D. Tuttle

Dr. Arnold D. Tuttle, class of 1906, and retired Colonel, U. S. Army Medical Corps, died suddenly of heart attack in Chicago on October 6, 1951. Colonel Tuttle, who retired in June, 1951, as Medical Director of United Airlines, was 71.

Born in Baltimore, the son of Dwight C. Tuttle, he very early enlisted in the Army while his father, an Army man, was stationed at Fort McHenry. As an enlisted man he entered the School of Medicine, University of Maryland, graduating in 1906. Following his graduation he entered the Army Medical School, leaving it as an honor graduate. He then served on General Pershing's staff and on the staff of the Surgeon General's office.

After a brief period of service during World War I he was Commandant of the Army School of Aviation Medicine at Randolph Field, Texas. Following his retirement, he became associated with the United Airlines in 1937 and as Director of the medical services, remained in this capacity until he retired in June, 1951. Among the many decorations, Colonel Tuttle held the Distinguished Service Medal, the French Legion of Honor and the Belgian Order of Leopold. He was a former President of the Aero Medical Association, the Association of Military Surgeons and the Institute of Aeronautical Sciences. In 1950 the School of Medicine honored him with the annual Alumni Honor Award and gold key.

Dr. Alexander Douglas McConachie

Dr. Alexander Douglas McConachie, class of 1890, died at his home in Baltimore on September 21, 1951 in his 87th year. For more than 50 years Dr. McConachie had been living at the same address, 805 North Charles Street and was one of the few remaining residents of that thoroughfare.

Dr. McConachie was born in Woodstock, Ontario on August 22, 1864, the son of William and Elsie McConachie. He attended the Woodstock public schools and Woodstock College Institute. At the age of 17 he was graduated from the Toronto Normal School and later obtained employment as a teacher. After a few years he began the study of dentistry and was graduated in 1886 as the gold medalist of his class. The following year he continued his studies at the University of Maryland School of Medicine and in 1890 was graduated, again at the top of his class. He then

worked for a short while as a medical officer at the University Hospital and later took post graduate work at the Johns Hopkins University in biology, pathology and bacteriology, taking portions of his study under the late Dr. William H. Welch. For many years he practiced otolaryngology and later became interested in surgery. At the outbreak of World War I he enlisted in the Army Medical Corps and was associated with Base Hospital 202 at Orleans, France. A colorful practitioner, his interests were indeed many and were intense. He was interested in the theatre as well as in motion pictures. He was the author of numerous scientific articles and was known as one of the prominent figures along Charles Street, Baltimore.

Dr. Thomas J. Cummins

Dr. Thomas J. Cummins, class of 1903, College of Physicians and Surgeons, died at his home in Mineville, New York on September 22, 1951.

Born in Vineland, New Jersey, Dr. Cummins began his medical education at the University of Vermont later transferring to the College of Physicians and Surgeons after one year. He served his internship at Mercy Hospital and then entered practice in Plattsburg, New York. During the years 1915-17 he practiced in the Southwest. He then returned to Northern New York State where he resided for 33 years.

Dr. Cummins was surgeon to the Mineville Hospital and industrial physician for the Republic Steel Corporation in the Port Henry District. He was consulting physician to the Physicians' Hospital of Plattsburg and to the St. Lawrence State Hospital in Ogdensburg, New York. He was a past President of the Essex County Medical Society and a Fellow of the American Medical Association. For many years he had been Health Officer for the town of Moriah and was President of the local school board as well as Vice-President of the Citizens National Bank of Port Henry, New York.

Dr. Ernest P. Roop

Dr. Ernest P. Roop, class of 1903, died on February 2, 1952, of injuries received in an automobile accident. Following his graduation from the School of Medicine, he entered practice in rural areas of the South and returned to Maryland after a period of time and practiced at New Market, Maryland. He is survived by a son, Dr. Ronald J. Roop, who is at present physician for the Delaware-Maryland-District of Columbia Division of the Esso-Standard Oil Company.

Asper, Guy Philip, Chambersburg, Pa.; class of 1903; aged 71; served during World War I; died, recently, of arteriosclerotic heart disease.

DiStasio, Frank, New Haven, Conn.; class of 1933; aged 45; died, October 20, 1951.

Driver, Wilson Eliot, Norfolk, Va.; class of 1893; aged 81; died, October 14, 1951, of coronary sclerosis.

Hilton, George Libby, Nashua, N. H.; P & S, class of 1902; aged 75; died, October 9, 1951.

Hurley, Thomas A., Macon, Ga.; class of 1904; aged 72; died, December 21, 1951.

Johnson, Raymond Lovejoy, Waycross, Ga.; class of 1914; aged 69; died, September 1, 1951, of coronary occlusion.

Bulletin OF THE SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

VOLUME 37

July, 1952

NUMBER 3

SPHENOID RIDGE MENINGIOMAS*

PRESENTATION OF FIVE SURGICALLY PROVED CASES

CHARLES BAGLEY, JR., M.D.† AND GEORGE W. SMITH, M.D.‡

The purpose of this paper is to review the clinical and roentgenographic findings associated with sphenoid ridge meningiomas, and to exemplify these by presenting five case histories of surgically proved tumors found laterally along the sphenoid ridge.

Historically, Durante (1) is given credit for removing one of the first brain tumors in 1884; this was a meningeal growth along the sphenoid ridge. He described ipsilateral exophthalmos and a loss of the sense of smell in his patient. In 1892 Mueller (2) presented three cases of basilar anterior fossa tumor with unilateral proptosis. He felt the proptosis in his cases resulted from the extension of the tumor growth into the orbital cavity, thus pushing the globe forward. It remained for Cushing (3) in 1922 to clearly establish the meningioma of the sphenoid ridge as a definite clinico-pathologic entity. Elsberg et al. (4) in 1932 reviewed 807 cases of verified intracranial neoplasms, of which 61 were temporo-frontal meningiomas involving the anterior and middle fossae. They did not state how many of these were on the sphenoid ridge, but reviewed the cases with emphasis on the occurrence of proptosis and extracranial signs. Of their 61 fronto-temporal meningiomas 10 showed unilateral exophthalmos. Elsberg in another review (5) stated that 15 of 120, or 14.7 per cent of meningiomas were located in the region of the sphenoid ridge on the under surface of the temporal lobe.

Dandy (6), in his monograph on orbital tumors, reported a series of 29, of which 11 were meningiomas in the region of the sphenoid ridge with extension into the orbit. He strongly advised the transcranial approach in any case in which unilateral proptosis was seen and when a tumor involving the orbit was suspected.

Cohen and Scarff (7) reviewed the literature on sphenoid ridge tumors and presented a case showing ipsilateral proptosis. They stated that slowly progressive uni-

* Received for publication Nov. 7, 1950.

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lateral exophthalmos associated with ophthalmoplegia, primary optic atrophy and hyperplastic thickening of the posterior orbital plate were pathognomonic for a meningioma arising from the greater wing of the sphenoid ridge involving the middle cranial fossa.

That the sphenoid ridge is one of the less common sites for the origin of meningiomas is shown in Cushing and Eisenhardt's series (8) which gives 16.9 per cent as occurring on the sphenoid ridge. However, this lesion merits special attention because the signs are quite characteristic and early recognition makes surgical removal more simple, preventing the progression of visual and neurologic deficits. Although little reference is made to extracranial signs of these tumors, such signs are frequently first seen by physicians other than neurologists and neurosurgeons; the awareness of the intracranial origin is important to all concerned.

Anatomically these benign neoplasms may spring from the meninges along 1) the inner portion of the ridge, and are called clinoidal because they are adjacent to the clinoidal process; 2) they may arise from the middle of the ridge; or 3) they may originate far laterally on the ridge. These latter are called pterional. The anatomic subdividing of these tumors is attributed to Cushing and Eisenhardt (8).

Clinically the signs and symptoms presented will vary according to the position of the tumor on the ridge. The inner or clinoidal group, by their close approximation to the optic, oculomotor, trochlear and abducens nerves, will most commonly present with disturbance of visual acuity and/or disturbance in the fields and extraocular movements of that globe. Because of involvement of these particular cranial nerves, clinoidal meningiomas may frequently be confused with sellar or suprasellar tumors. Less common signs associated with the clinoidal group are hemianoptic field defects and signs referable to embarrassment of the blood flow in the carotid, ophthalmic, anterior and middle cerebral arteries.

The clinical findings in the neoplasms arising from the middle and lateral portion of the ridge are not as clear-cut or distinct as the clinoidal group. These symptoms usually appear later, and often fail to show any cranial nerve involvement. The presenting symptoms and signs may well be only those of increased intracranial pressure; i.e., papilledema, headache, nausea, vomiting, and similar manifestations. The occasional localizing signs are anosmia and unilateral exophthalmos. Hemianoptic field defects are not seen in this group. The middle and lateral-occurring tumor may occasionally extend into the middle fossa to compress the temporal lobe or the Gasserian ganglion, giving rise to tic douloureux; these tumors may grow into the optic fissure and produce an exophthalmos by 1) crowding the contents of the orbit; 2) by impairment of the venous return of the orbital flow; and/or 3) by local involvement of the extraocular muscles with relaxation. Compression of the temporal lobe and uncinate fits may be seen.

Meningiomas are characteristically slow-growing, and definitive extracranial localizing signs may not appear until late. These growths are both osteoplastic and osteoclastic, and may frequently show evidence of erosion of the alar plate with extension into the temporal fossa resulting in fullness in the region of the temple. This is a nonpulsating but tender fullness. Sphenoid ridge tumors also erode through the floor of the middle cranial fossa into the zygomatic fossa, and/or into the antrum. Such

involvement is usually manifest in roentgenograms of the skull. When these extracranial signs are present it is extremely important to recognize the possible benign intracranial origin.

The *roentgen-ray findings* in sphenoid ridge tumors are dependent upon the hyperostosis and the bone destruction secondary to the meningeal growth. Phemister (9) stated that it was noted as early as 1864 by Virchow that bone overlying certain brain tumors was hyperostotic. A review of the literature shows that such thickening of the skull is frequently considered as a primary bone tumor, osteoma or sarcoma, and the intracranial lesion overlooked or considered secondary. Hyperostosis in meningiomas is more common than bone erosion. Cushing (3) later stated that tumors en plaque on the outer ridge are prone to cause thickening of bone at the temporo-sphenoid junction. Erosion and hyperostosis may occur concurrently in the same skull. Roentgenologic findings are usually quite typical, showing hyperostosis along the ridge, supraorbital plate, and the squamous portion of the temporal bone. Because of this hyperostosis the vascular markings of the middle meningeal groove are more deep. On the other hand, the sphenoid ridge may show erosion with interruption of the normal contour. The sella turcica and posterior clinoid process may show thinning secondary to increased intracranial pressure. The squamous bone may be eroded and the middle meningeal groove obliterated. The supraorbital plate, orbital rim and the zygoma may show evidence of erosion, the orbit may show clouding, and there may be clouding of the antrum depending on the extent of the extracranial involvement.

Ventriculography usually demonstrates a shift of the lateral and third ventricles, and a unilateral distortion (10) of the interpeduncular cistern. The disturbance in the outline of the interpeduncular cistern is seen mainly in the clinoidal tumors.

Cerebral arteriography may show distortion of the middle cerebral complex, displacement of the internal carotid, and the usual tumor lacework or "smear" with vessels entering the tumor mass from the external carotid system.

Sphenoid ridge tumors are usually seen in middle aged adults, more often in females. Interestingly enough these tumors are consistently seen on the left side in females and on the right in males (11).

Five case histories of proved sphenoid ridge meningiomas which presented themselves with extracranial signs are reported.

Case I, C. C., a 58 year old white male, was admitted to the University Hospital complaining of bulging of the right eye, excessive lacrimation of the right eye, and fullness and tenderness of the right temple. The protrusion of his right eye had been minimal for several years but was first noticed approximately 15 years previously. He was told he had a tumor behind the eye and was given roentgen-ray treatment. This appeared to arrest the bulging of the eye until about 8 years prior to admission at which time it seemed to increase, and the eye seemed to be pushed downward. Examination on admission showed him to have a slightly painful, non-pulsating fullness in the right supra-zygomatic area. He had slightly painful non-pulsating unilateral right proptosis with no visual defect. (See fig. 1c.) There was impairment of upward, downward and lateral gaze. The pupils were regular, round and equal, with an excellent response to light and accommodation. The corneas were brisk and equal. The electroencephalogram showed a localized slow-wave focus in the right fronto-temporal region (See fig. 1d). Roentgenographs of the skull showed erosion of the alar plate, the lateral wall of the orbit and the supraorbital plate on the right. There was an increase in density

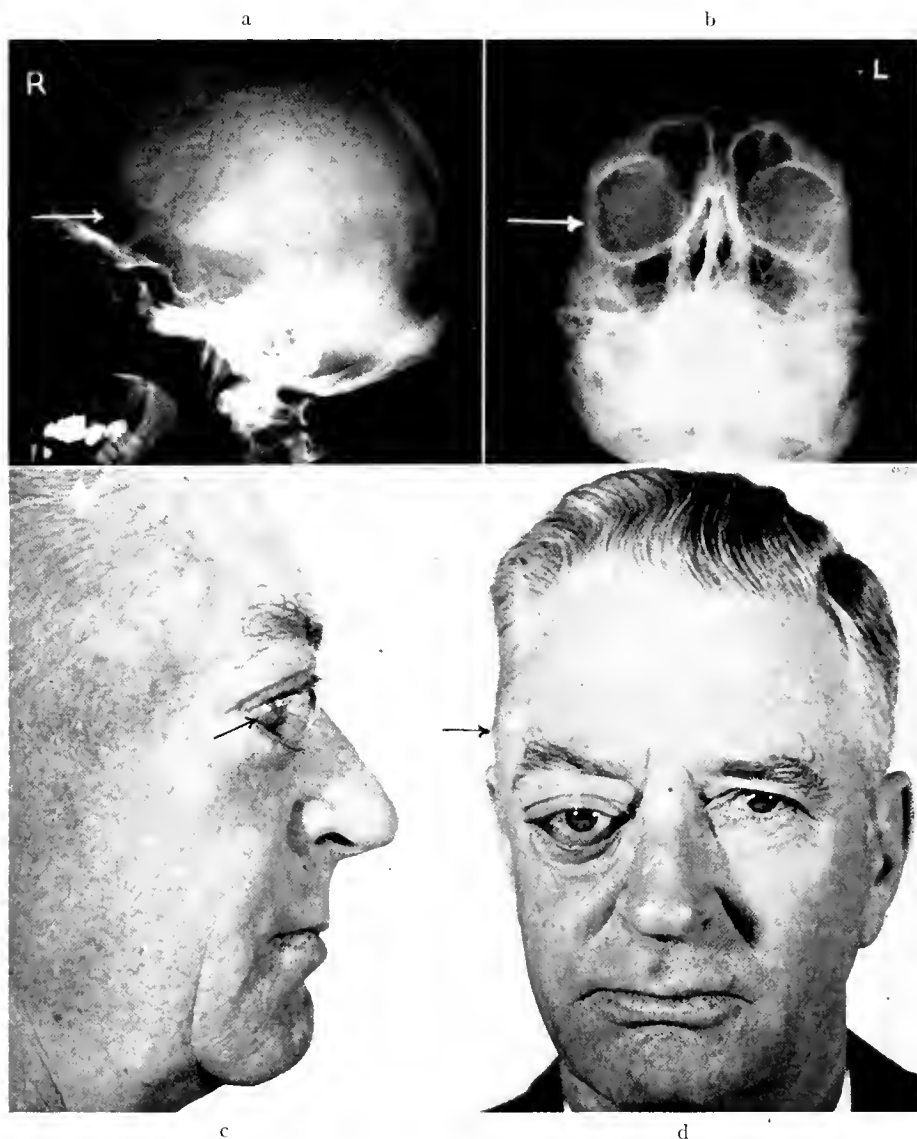


FIG. 1a. Lateral view of skull, preoperatively, Case I. Note the rarefaction of right fronto-temporal bones.

FIG. 1b. Orbital view of skull, Case I. Note the destruction of the right sphenoid ridge, supra-orbital plate, lateral rim of orbit and the temporal bone.

FIG. 1c. AP and Lateral view of patient, preoperatively, Case I. Note temporal fossa fullness on right. Note widened palpebral fissure. Note depression of right globe. Notice right proptosis. The darkened tissue in the outer canthus of right eye proved to be tumor tissue.

FIG. 1d. Electroencephalogram, Case I. Scalp to ear lead EEG, showing a definite 1-2/sec high voltage slow-wave focus in the right frontal area of the type frequently seen in focal expanding lesions.

a

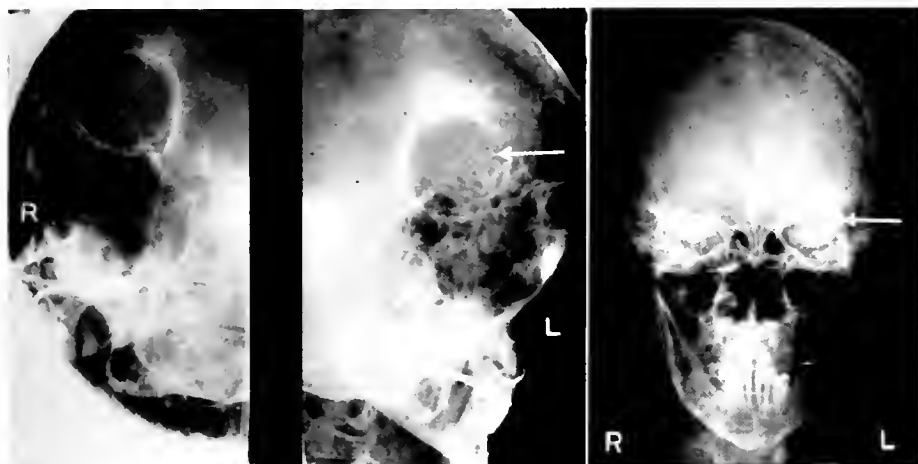


FIG. 2a. P.A. view of skull. Case II. Note the hyperostosis (arrow) of the sphenoid ridge and the orbit on the left.

FIG. 2b. Lateral view of orbit. Case II. Note area of increased density (arrow) of the orbit and the adjacent temporal bone. Note the increased density of the zygomatic fossa on the *left* side. The right (normal) orbit is shown for comparison.

FIG. 2c. AP and Lateral views of patient 6 years postoperatively, Case II. Note that there is no evidence of Proptosis or temporal fossa fullness on the left.

within the right orbit. The working diagnosis was that of pterional en plaque type sphenoid ridge meningioma. The patient had a right frontal craniotomy and a tumor mass was seen eroding through the skull, involving the temporal fascia in the region of the right temporal fossa. The mass involved

the dura, the supraorbital plate and the lateral wall of the orbit. Tumor tissue had extended throughout the areolar tissue of the orbit. The tumor mass was removed in block including the dura, making necessary polythene replacement for the dura. Considerable tumor tissue was left within the orbit. It was felt advisable to remove the tumor tissue from the orbit at a second operation. It was necessary to enucleate the eye and clean the orbit completely 8 months later. The post-operative course was without incident and the patient, to date, (18 months) shows no evidence of recurrence. Microscopic study of the tissue removed was reported as meningioma, involving the dura, bone, sheath of the temporalis muscle and areolar tissue of the orbit.

Case II, M. M., a 55 year old white female, was admitted to the hospital with complaints of pain behind the left eye for 6 years, and protrusion of the left eye for 3 years. The pain in the left eye started insidiously with headache and tenderness of the left side of the head. There had been no

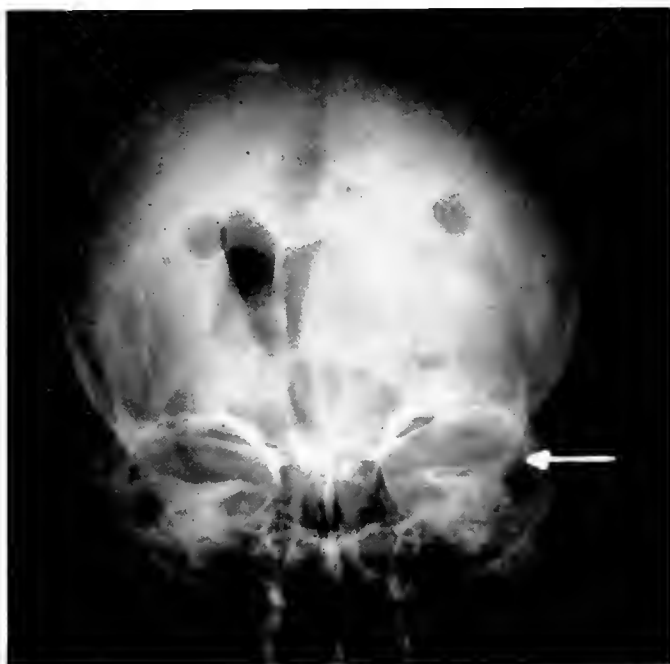


FIG. 3a. AP view of skull, Case III. Following ventriculography. Note the marked asymmetry between the sphenoid ridges. Note clouding of left orbit, and loss of detail of lateral rim of left orbit. Note marked shift of lateral and third ventricles, with compression of left lateral.

weakness of the extremities or sensory changes, and no loss of the senses of smell and taste. An examination showed a well nourished woman with pronounced proptosis of the left eye. There were no mental symptoms. The cranial nerves including the fields and fundi were normal. Motor and sensory systems were normal. There was minimal left temporal fullness. Skull roentgen-rays (See Fig. 2a, 2b.) showed hyperostosis of the sphenoid ridge, left, with clouding of the left orbit and antrum. The patient was taken to the operating room and a left frontal craniotomy was performed. Tumor mass was seen to involve the left temporal bone, zygoma, roof, walls and most of the floor of the orbit. Additional tumor tissue was found within the orbit. This appeared to be moderately cellular. About three-quarters of the mass was removed. Post-operatively the patient had an uneventful course. She received moderate doses of roentgen-ray therapy to the left orbit and temporal region. There was no definite improvement in her visual acuity upon discharge, but her exophthalmos was much improved. A 6-year follow-up showed that she recently had the left eye enucleated

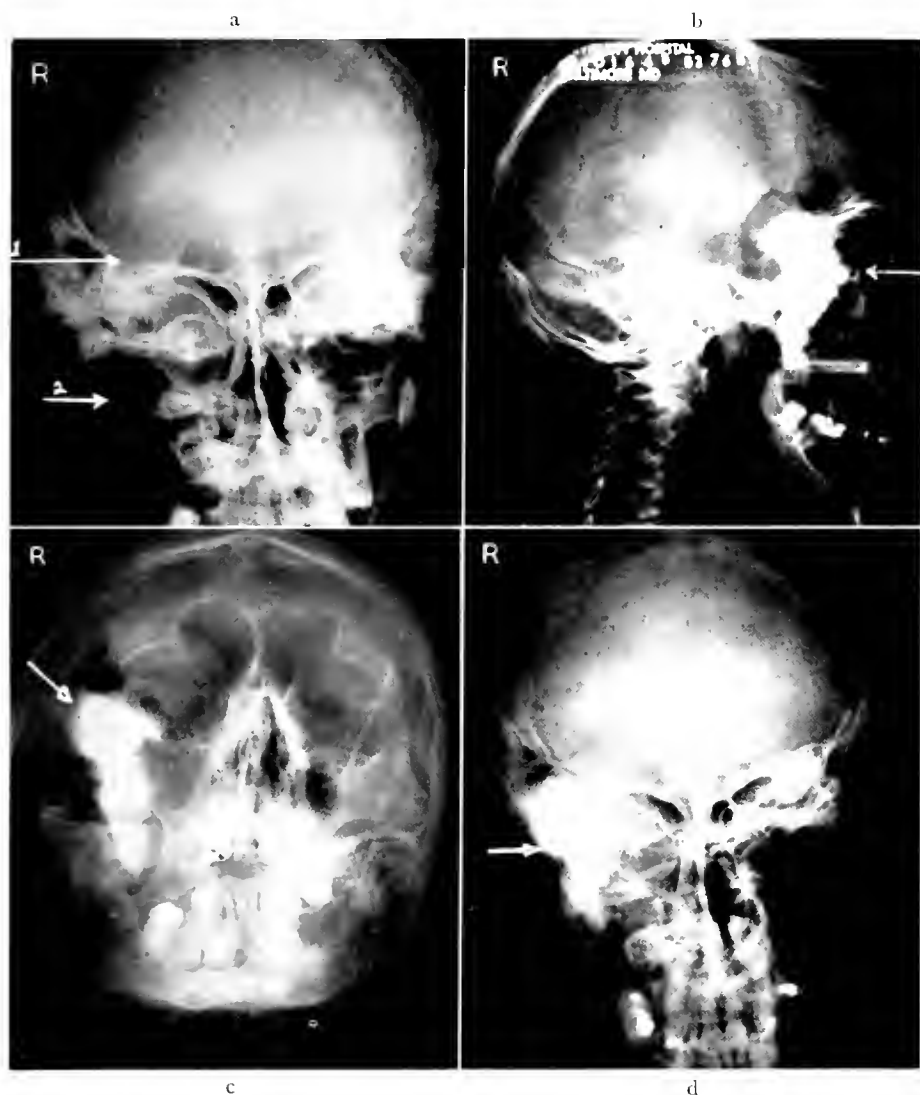


FIG. 4a. Preoperative AP view of skull, Case IV. Note destructive process of the sphenoid ridge (arrow 1), the lateral border of the right orbit, a portion of the frontal bone and the right malar bone (arrow 2).

FIG. 4b. Lateral view of skull, Case IV. Taken after injection of 10 cc *Diodrast* into the operative cavity. This shows the cavity (arrow) to extend from the floor of the anterior fossa downward to the level of the hard palate. The cavity measured 3 cm at its widest.

FIG. 4c. Face view of skull, Case IV. Taken after injection of 10 cc *Diodrast* into the operative cavity. This reveals the dye to be in the zygomatic fossa and starting to enter the right antrum and orbit (arrow).

FIG. 4d. PA view of skull, Case IV. Taken following injection of 10 cc *Diodrast* into operative cavity. The radiopaque material (arrow) extends from the temporal fossa into the orbit and antrum.

because of glaucoma with uncontrollable pain. Otherwise she is asymptomatic. The pathologic tissue removed was reported as a meningioma. Fig. 2c shows a photograph of the patient 6 years after craniotomy.

Case III, V. F., a 35 year old white female, was admitted with complaints of diplopia, decreased vision acuity, nausea and vomiting, and convulsive seizures of 3 months duration. She had considerable weight loss for one year, and frontal headaches radiating to the back of the neck. An examination revealed bilateral papilledema, weakness of the left internal rectus muscle and a bruit heard over the left eye. Otherwise the examination was within normal limits. Roentgenographs of the skull showed a larger channel for the middle meningeal vessel on the right, hyperostosis of the left sphenoid ridge and clouding of the left orbit. A ventriculogram (See fig. 3a) showed compression of the right

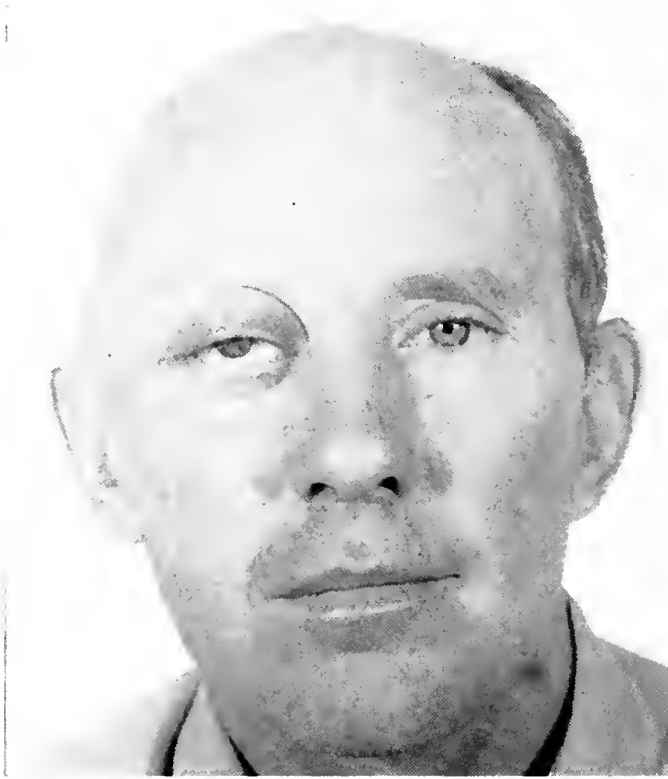


FIG. 4e. Preoperative photograph, Case IV. Note the marked right temporal bulge, and right exophthalmos.

frontal pole, left lateral ventricle, with a ventricular shift to the right. Craniotomy revealed a hard spherical tumor resting on the middle and lateral portion of the sphenoid ridge, crowding the base of the frontal and temporal lobes. A partial removal of the tumor was made at this time, and at reoperation 2 weeks later the tumor was removed in toto. The pathologic report on the removed microscopic tissue was "meningioma presenting ossifying areas which appear to be within and invading the dura." The patient's post-operative course was uneventful, and she is symptom free, 3 years after surgery.

Case IV, W. T., a 40 year old white male, was admitted to the University Hospital with complaints of a swelling in the right suprazygomatic area, and proptosis of the right eye of 4 months duration. Past history revealed he had roentgen-ray and radium treatments in 1929-1932 for a

tumor located in the same place, then diagnosed (without surgery or biopsy) as an osteosarcoma. During the intervening years until May 1948 the patient was asymptomatic except for severe pain occurring periodically over the right eye. In May 1948 a similar swelling appeared in the right temporal region just posterior to the external canthus, and progressed to the right frontal region during that month (See fig. 4e). The swelling increased in size, felt smooth and fluctuant. He received deep roentgen therapy without improvement. The tumor mass was aspirated several times and bloody fluid withdrawn. Roentgenographs of the skull on admission showed bone destruction involving the zygoma, lateral margin of the orbit on a portion of the frontal bone and a portion of the greater wing of the sphenoid on the right. The working diagnosis of sphenoid ridge meningioma was made and a left transcranial surgical approach revealed a tumor which had eroded the lateral wall of the orbit, the greater wing of the sphenoid and the lateral wall of the maxilla and extended inferiorly into the antrum as far as the hard palate. Tumor tissue was also found in the temporal and zygomatic fossae, and in the orbit. Intracranially it impinged on the interior surface of the right frontal and temporal lobes. The pathologic report indicated that the tumor was a meningioma which had undergone sarcomatous changes. The patient had deep roentgen therapy but returned within 2 months with a recurrence of symptoms. Roentgen examinations at this time showed an extension of the bony destruction involving the orbit and zygoma, and in spite of further surgery and roentgen therapy he expired 3 months later. Figures 4b, 4c, 4d show the roentgenographs, with 10 cc. of 35 per cent Diodrast[®] instilled into the operative defect following the surgical excision. These clearly show the extent and limits of the tumor growth into the face.

Case V, C. M., a 48 year old white female, was admitted to the hospital because of a growth in the left temporal region of the skull. This had increased in size over a 20 year period, the greatest increase being the year prior to admission. The mass was the size of a silver dollar, had a cartilaginous consistency, and was extremely tender to palpation. The patient complained of partial deafness in the left ear for 10 years. The left eye felt as if it were being pulled to the left. There was no diplopia and the fundi appeared normal. Roentgenographs of the skull showed a localized bony lesion in the left temporal area causing direct pressure and resulting in bone destruction. Surgery revealed a tumor "half the size of an unshelled walnut" of the left temporal bone, extending down to and involving the dura, on its outer surface only. The mass was extirpated in its entirety. It was soft, encapsulated, and the bone was fibrous and of cartilaginous consistency. The pathologic report of the microscopic tissue was "meningeal endothelioma, benign." The patient ran a symptom free post-operative course, and had an uneventful 26-year follow-up, expiring of arteriosclerotic heart disease at the age of 74 years.

COMMENT

Probably the most interesting aspect of these case histories is to be found in the long duration of symptoms; In two cases 20 years, in one case 15 years, and 6 and 4 years in the other two. Correlated with this are the roentgen findings in the three cases of long-standing symptoms, (I, IV & V), in which there was erosion of the sphenoid ridge and orbit. Those cases of short duration were prone to reveal hyperostosis (II & III). From this series alone it would seem that the longer the case history, the more prone to erosion, and meningiomas of short standing symptoms produce hyperostotic changes.

The most constant symptom appeared to be pain in the region of the temporal fossa and the orbit on the side of the tumor. This was present in all cases. The temporal fullness was the next most constant sign. This fullness was tender and non-pulsating. There was a loss of the normal temporal fossa and a gentle convex curve to the area in cases I, II & III. In case V the temporal fullness was more pronounced and more spherical in form. Headache was the next most common sign, usually frontal and fronto-temporal on the side of the lesion, and was a prominent symptom in all cases except case I. Exophthalmos was present in 4 patients. This varied in

degree and was greatest in the cases of long standing. The proptotic globe was non-pulsating, and was in cases I, II & IV found to be the result of tumor growth into the orbital cavity forcing the globe forward, downward and outward. In fact, as shown in figure 1c (case I), the tumor growth can actually be seen at the outer canthus of the right eye. It is postulated that in case V the proptosis was of the axial type because of venous engorgement. Unilateral exophthalmos is an extremely important localizing sign and clue to the cytology, as of all the intracranial tumors, meningiomas along the sphenoid ridge are the most prone to produce unilateral proptosis.

Involvement of the extraocular muscles of the eye was seen in 3 patients. In the cases of greatest degree of exophthalmos there was complete unilateral ophthalmoplegia. In case III there was only weakness of the internal rectus muscle. Papilledema was seen only in case III. There was no involvement of the intrinsic muscles of the eye, and no visual field defects were seen.

In cases I, II, IV & V the tumor growth extended outside the cranial vault. The antrum and zygomatic fossa were involved and invaded with tumor growth in cases II & IV. The temporal bone and fossa were involved in cases I, II, IV & V. Clouding and/or erosion of the antrum and orbit are commonly seen and may be misleading as indicative of local pathology. Involvement of the orbit was present in 3 of the patients.

Convulsions, a symptom rarely observed in sphenoid ridge tumors, was present in case III. Because other authors include anosmia as an occasional symptom seen in sphenoid ridge tumors, it should be stated that this symptom could not be elicited in these cases. There were no pyramidal tract signs in this series.

Nowhere in the literature was there to be found a case in which glaucoma was a sequel to the orbital involvement. Case II of this series developed glaucoma 6 years post-operatively, which was so severe and painful that enucleation was required.

The employment of enucleation because of tumor involvement of the extraocular muscles and orbital tissue was reported in one case in Cushing and Eisenhardt's series (8). This was necessary in case I of our series.

No adequate explanation has ever been given for sphenoid ridge meningiomas occurring predominantly on the left in females and on the right in males. The cases in our series followed this pattern, the three female patients had left sphenoid ridge tumors, and the two males right sided growths.

Included in the differential diagnosis of sphenoid ridge meningioma is osteoma of the supraorbital plate and sphenoid ridge. The fact that both lesions may produce unilateral proptosis and hyperostosis of the sphenoid ridge make this particularly confusing. Fortunately, as pointed out by Dandy (12), osteomas occur before the age of 30 years and meningiomas after that age. Our cases were all over 30 years of age and followed this generality.

Considering the extracranial sign of proptosis, it is necessary to include in the differential diagnosis pseudotumor or "inflammatory nodule" (13) of the orbit. This lesion gives rise to a rapid exophthalmos with inflammatory signs which tends to clear or improve spontaneously with no roentgen ray changes in the skull or orbit. Pseudotumor is probably the most common cause of unilateral exophthalmos.

Although the meningioma is considered relatively resistant to roentgen therapy,

it would seem from our cases I & IV, in which the early signs completely disappeared and the condition remained quiescent for a period of approximately 15 years following deep roentgen therapy, that these tumors are moderately radio sensitive. The fact that the tumor in case IV underwent malignant changes is of interest in the light of roentgen therapy and the long duration of the tumor. It is however, beyond the scope of this paper to expound on the response to roentgen therapy and the malignant changes that may occur in meningiomas.

SUMMARY

The extracranial signs of unilateral, painful, nonpulsating temporal fullness and unilateral nonpulsating proptosis, occurring in a middle-aged adult, should always suggest the possibility of an intracranial origin, the most likely lesion being a sphenoid ridge meningioma. This possible diagnosis is further supported by a long-standing history of these extracranial signs slowly progressing. The diagnosis is most certain when further supported by roentgen evidence of hyperostosis (in the shorter duration cases) or erosion (in the long-standing cases) of the sphenoid ridge, supra-orbital plate, or squamous portion of the temporal bone.

The recognition of the intracranial origin of these benign tumors presenting as facial or orbital growths is most important as the surgical approach is obvious and clear-cut once the origin and diagnosis are established.

The diagnosis may be confused both clinically and roentgenologically with an osteoma of the orbit, especially in the hyperostotic group. The differential diagnosis must include sinusitis with an inflammatory involvement of the contiguous tissue and orbital contents. An "inflammatory nodule" or pseudotumor of the orbit will frequently give unilateral proptosis. Primary carcinomas of the antrum and primary tumors of the orbit globe or optic nerve must be considered. There are other conditions that may produce some of the symptoms or a portion of the symptom complex. However, these are usually quickly excluded by their lack of completeness of the entire symptom complex.

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CLINICAL APPLICATIONS OF PHARMACOLOGIC PRINCIPLES AND RATIONAL THERAPY IN OTOLARYNGOLOGY*†

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To attempt to cover the whole didactic field of pharmacology and therapeutics as applied to clinical otolaryngology is an obvious impossibility. However, it is worthwhile to discuss some of the clinical problems which beset every busy practitioner of otolaryngology in this day of every-changing therapeutics. Surgical aspects will not be considered.

THE NOSE AND SINUSES

In considering rational therapy of the nose, most treatments directed at this organ are not really specific but rather aimed at restoring the normal physiology and affording relief of symptoms for the patient. Thus, in the acute rhinitis of the common cold there is no known treatment which is specific for the etiologic virus, and all efforts must be directed at restoring normal physiologic function, controlling secondary infection and making the patient comfortable. In order to understand this problem properly, it is necessary to briefly review the normal physiology of the nose.

Aside from its function of olfaction, the nose is an integral part of the respiratory tract and partakes in all of its functions. It is part of the natural airway in man, and serves to render the inspired air acceptable to the delicate alveoli of the lungs by warming and humidifying the air and rendering it free of foreign matter. In addition the nasal mucous membrane secretes a constant blanket of mucous which protects the integrity of the mucosa mechanically against bacterial invasion. It serves to destroy bacteria by its contained lysozyme, and aids in the filtration process. This mucosa is normally slightly acid. The proper functioning and propulsion of this mucous blanket depends upon the integrity and functionality of the underlying cilia. It therefore becomes obvious that all therapy directed at the nose should seek to maintain or restore the normal mucous blanket and the ciliary activity.

It has been found that infections (either viral or bacterial), allergy, extremes of temperature, exposure to chemical fumes (such as ammonia and sulphur dioxide), and many drugs when applied locally cause pronounced turgescence of the nasal tissues, increased mucous flow and a definite change in the acid-base balance of the nasal secretion toward the alkaline side. There is often simultaneous interference with the ciliary activity.

Since it is not always possible to direct therapy at the causative agent, efforts are rationally made towards a prompt restoration of the normal physiology. Since restoration of an airway is a prime requisite in all of these conditions, an effective vasoconstrictor is indicated but it should not be one which causes a marked secondary relaxation of the smooth muscles of the cavernous tissues of the turbinates (so called "rebound action"). In addition the preparation should be isotonic with nasal mucous,

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† Presented at the Postgraduate Clinical Session of the Medical College of Virginia on November 28, 1951.

and should have a pH that is slightly acid (about 6.0). Preferably it should be buffered with a mixture of phosphates or other innocuous salts in order to be able to neutralize the excess alkalinity of the affected nose and still maintain its pH value. Under no circumstances should the preparation affect ciliary activity. It should, of course, be an aqueous solution. This means that such highly acid preparations as suprenin (adrenalin®) should be avoided, and that such highly alkaline preparations as the mercurial antiseptics (mercurochrome®, merthiolate®, metaphen®) and the sodium salts of sulfathiazole are likewise contraindicated. The silver protein preparations (argyrol®), the metallic salts (silver nitrate and zinc salts) vegetable and mineral oils, and the organic astringents such as camphor, thymol, menthol and eucalyptol adversely affect the ciliary activity. All these are best avoided.

A partial list of the preparations which meet the requirements for rational nasal medication includes: 1 per cent ephedrine hydrochloride in normal saline, Neo-synephrine®, Isohalant®, Glucofedrin®, Propadrine®, Vonedrine®, Tuamine®, Clopane®, and Rhinalgan®. On the other hand, Privine®, which meets the tests of chemical composition, is a particularly deleterious vasoconstrictor. Whereas the other vasoconstrictors are sympatheticogenic in their action, Privine® acts directly on the smooth muscles of the vessels of the cavernous tissues and mucous membranes of the nose, presumably at the myoneural junctions, much like the action of curare. The continued use of Privine® soon produces less effective vasoconstriction and greater and longer "rebound action", so that after a time the turbinal tissues are relatively "paralyzed" in a state of turgescence. This state of advanced vasomotor rhinitis is not amenable to any known therapy, but should be treated by absolute avoidance of all vasoconstrictors. The liberal use of antihistaminics (and sedatives where necessary) and the most persuasive bedside manner is in order to encourage the patient until the effects of Privine® have been overcome. The potential dangers of this product are great and must be taken into grave consideration.

The inclusion of sulfonamides and penicillin in nasal medications serves no useful purpose in the majority of instances of acute infection. Repeated bacteriologic studies have shown that any reduction in bacterial flora which may result is very fleeting and is usually followed by an increased bacterial count in a short time. In chronic nasal and sinus infections, these preparations are often of some value but they should only be included in the formula when they conform to the basic principles set forth above; i.e., the preparation remains slightly acid, is isotonic and does not affect ciliary activity. This precludes the inclusion of practically all of the sulfonamides in the formula, with the exception of Sylfamylon®, which is fairly soluble in aqueous media without conversion to its alkaline salts. Tyrothricin® and Bacitracin® may be included in the formula for nasal medications without adversely affecting the pH of the preparation or the ciliary activity.

When the severity of the infection warrants the use of an antibiotic it is far preferable to give such a preparation either orally or parenterally. The local use of such preparations may well serve to sensitize the patient to the drug or to afford an opportunity for the offending organisms to become resistant to the drug. Therefore, promiscuous prescribing of penicillin nose drops for a relatively innocuous rhinitis or sinusitis should be avoided as the patient may develop a severe tracheobronchitis or

pneumonia and at the same time become penicillin-sensitive or penicillin-fast. Even though other drugs are now available (aureomycin®, chloromycetin®, etc.), penicillin may still prove the drug of choice in such hypothetical cases but be ineffective because of injudicious use of it in a topical nose drop preparation.

With the introduction of the antihistaminics, the armamentarium of physicians was greatly strengthened. These drugs have proved to be of inestimable value in the management of allergic patients. Great claims have been made, and equally emphatic denials have been registered against them in the management of the common cold and its resultant rhinitis and sinusitis. Unquestionably, patients are made more comfortable by their use in the early stages of a common cold. However, the usual error is to use antihistaminics in too large doses and for too long a time. It is generally agreed that any beneficial effect they may have on the common cold results from a combination of effects. First, there is an atropine-like effect with all of these drugs. In the first 3 days of the common cold this effect is very welcome to aid in "drying up" the usual copious mucorrhea which is present. Too large dosage and too long continued administration, however, cause excessive drying with subsequent interference with ciliary activity and stagnation of infected secretion in the nose and sinuses. The second useful effect of the antihistaminics is their sedative action, which is always helpful in allaying the discomfort experienced with an acute rhinitis. The last useful effect is that of reducing edema of the nasal tissues and thus aiding in maintaining a nasal airway and proper ventilation for the sinuses. For these purposes, these drugs may be employed in the common cold for not more than 3 or 4 days and in approximately one-half their therapeutic dose. In cases of true allergic rhinitis, of course, full dosages are continued for as long as indicated. Nose drops and nasal sprays in general tend to aggravate the allergic patient, so that they should seldom be prescribed. It is best to rely almost entirely on the antihistaminics and other anti-allergic measures. •

More recently there has been an effort on the part of the pharmaceutical manufacturers to include an antihistaminic in nose drops. Such locally applied antihistaminics have no vasoconstrictor activity but are thought to have some effect in reducing the edema of the nasal tissues. This may provide a greater airway and probably renders the mucosa better able to absorb the other contained medicaments in such nasal preparations. The judicious use of such antihistaminic-containing nose drops for a short period of time (say several days) often proves beneficial. This is especially true when there is a strong allergic or vasomotor reaction in the nose. The continued use of such a nose preparation invariably leads to local irritation and secondary congestion.

Oil base sprays have been condemned repeatedly over the past few years until now they are seldom prescribed. This is as it should be in so far as the treatment of acute or chronically infected cases is concerned. However, there is one condition in which the careful administering of oil base nasal sprays serves a very useful purpose, that of atrophic rhinitis. Here, the mucous blanket on which is placed so much dependence is gone, and the use of a bland oil base spray several times a day to replace this mucous blanket often affords considerable relief.

THE EAR

Infections of the nose and sinuses are often complicated by involvement of the eustachian tubes and middle ears, and it is therefore appropriate to discuss therapy of the ears at this time. Since the introduction of the newer chemotherapeutic and antibiotic agents, acute otitis media nearly always responds promptly to systemic therapy with these agents. However, the problem of otalgia and the other discomforting symptoms of middle ear pathology must be considered. The use of glycerin drops for the relief of pain associated with lesions of the middle ear is universally accepted. The ingredients that are sometimes dissolved in the glycerin ear drops are often open to question. The use of phenol or other caustics for their anesthetic effect is to be condemned. It is better to employ topical anesthetic agents such as anti-pyrine, benzocaine, etc. in glycerin, for at least no further irritation will be produced by them. It is also important to use pure unadulterated glycerin. However, once an ear drum is incised or has spontaneously ruptured, it is a mistake to employ such a glycerin ear drop. To do so is to add insult to injury, for now the already diseased middle ear mucosa will have to rid itself of this new chemical. If the ear does not respond to systemic therapy and local care after a week, and the perforation is clearly visible, then a glycerin drop containing urea and a sulfonamide, or penicillin, or aureomycin (as indicated) may be utilized to thin out the purulent discharge and effect some local bacteriostasis. The dry treatment without irrigations is preferred but many physicians use irrigations.

One point is important in ear irrigation: boric acid solution should not be used. Boric acid solutions have no bactericidal properties. Furthermore, saturated solutions vary in strength but are all hypertonic, not isotonic. (Solutions as prepared by the patient with boiling or hot water may contain as much as 20 per cent of boric acid; as prepared by a pharmacist, the usual solution will contain approximately 5 per cent boric acid. To be isotonic, the solution must contain 1.7 per cent boric acid.) The surface tension of an aqueous solution of boric acid is quite high so that it has no detergent or cleansing properties; in fact, such a solution will not mix well with secretions and hence may actually "pack in" the secretion rather than remove it from the ear canal. In addition to these objections, most solutions of boric acid as prepared in the home or in the hospital ward are super-saturated when made, since they are made by heat. As soon as this solution comes in contact with the ear canal and has cooled, some of the boric acid precipitates out as a whitish coating over the eardrum and canal, thus further obscuring the landmarks. Whereas normal saline solution has no antiseptic properties *per se*, it is at least cleansing, non-irritating and isotonic. If an antiseptic is desired, a 1-10,000 aqueous solution of zephiran chloride® is recommended, since it is not only germicidal but has a very low surface tension and hence exhibits great cleansing properties. It is also non irritating to tissues.

In chronic suppuration of the middle ear, the use of glycerin ear drops containing urea and sulfonamides is often quite effectual in drying up the ear and eliminating infection. For this purpose Otosmosan® is advantageous because of its wide spectrum of anti-bacterial and anti-fungicidal activity. More recently the poly-ethylene-glycol mixtures have been introduced as a base for such ear drops. The one

purported advantage is the lower surface tension of these mixtures, and therefore their greater miscibility with the ear discharge. However, there is one major drawback to the use of such mixtures of glycols. All these preparations stimulate granulations so that after using such an ear drop for a few weeks the otolaryngologist is faced with the problem of ever-forming new granulations. This is certainly undesirable. Practically all of the newer ear drops offered with aureomycin or terramycin as the active ingredient, employ such poly-glycol mixtures as the base, and hence should not be used for long periods of time.

Fungus infections were formerly thought to be very common in the external ear, but repeated efforts to isolate such fungi have more often failed than succeeded. A critical review of the problem now reveals that in at least 70 per cent of cases a Gram negative infection (aerogenes group and pyococcus) is present, rather than a fungus. This has been corroborated clinically as well. When the newer fungicidal agents of the propionic acid and undecylic acid series were first introduced, these were given extensive trial in the treatment of so-called fungus infections of the external ear canal. By and large the treatment was unsuccessful, and for the important reason that practically all of these preparations containing sodium propionate are quite irritating and treatment with them must be of short duration. Therefore recurrences were the rule.

Later efforts to find a suitable agent to combat the Gram negative organisms which are now known to be the offending pathogens have yielded several drugs of value. These were formerly considered saprophytic bacteria of no pathologic significance. Sulfanilamide powder is quite effective in some cases. A newer synthetic organic chemical, dibromsalicylaldehyde is effective against Gram negative and Gram positive organisms and also of value as a fungicidal against the usual fungi encountered in this area. The preparation is marketed under the trade name Dalyde®, and may be obtained in aqueous solution and in ointment form. Polymyxin B® has also proven to be of real value against Gram negative bacteria in recent experimental work.

There are many who feel that the time-honored cresols, especially when mixed with thymol, offer the best relief from true fungus infections of the ear canal. Cresatin® is the best example of this type of preparation, and 2 per cent of thymol is usually recommended to be added to it. The preparation has the property of producing local anesthesia, like all phenols, and therefore allays the troublesome itching

THE PHARYNX AND LARYNX

Local therapy directed at infections of the tonsils and pharynx has long been dominated by the use of gargles, and these have almost no effect on the areas under consideration. Frequently demonstrations of the ineffectuality of gargles are made by having a cooperative patient gargle with a solution of methylene blue. An examination of the throat immediately afterwards reveals stain on the hard and soft palates, the dorsum of the tongue, the anterior pillars and the base of the uvula; but the tonsillar surfaces, the posterior pharyngeal wall and even the main body of the uvula are unstained.

The use of lozenges is more effective in that the contained ingredients become dissolved in the saliva which flows over the entire fauces and pharynx. Lozenges are

thus more effective in spreading the desired medication over the affected areas. The use of medicated chewing gum (such as sulfathiazol gum®) is an even more effective approach to local therapy of the throat. Not only does the contained medication become dissolved in the saliva and thus flow over the affected area, but the mechanical action of chewing serves to squeeze matter from the crypts of the tonsils and pharyngeal mucosa. Assuming that one wishes to employ lozenges (or chewing gum), the same word of caution is necessary here as with nasal medication concerning the use of penicillin locally. In addition, the use of troches of penicillin, aureomycin®, chloromycetin® and to a lesser extent Bacitracin® often results in an annoying glossitis and stomatitis which the patient finds worse than his original sore throat. The use of tyrothricin and of the sulfonamides is not attended by this danger, and for that reason a tyrothricin lozenge or sulfathiazol gum is preferred to all other forms of prescribed local throat medication.

Of course, any patient with an acute infection should be given prompt and adequate systemic therapy with the appropriate chemotherapeutic and antibiotic agents.

As for local therapy directed to the larynx, no really valuable mixture or prescription has been advanced. In office practice, mildly astringent antiseptics are applied directly to the larynx by means of a laryngeal applicator. For this purpose 20 per cent silver protein solution (argyrol®) is usually used. Oil sprays are occasionally nebulized onto the larynx if there is much exudative secretion present. The use of steam inhalations and of mildly expectorant cough sedatives afford the greatest measure of relief. It is most important to control the dry, hacking cough which accompanies laryngeal inflammation, otherwise a vicious cycle results. Smoking must be discontinued during the acute phase of this disease, and all hot, spicy foods and drinks should likewise be avoided.

It is of passing interest to recall that the late Enrico Caruso is reported to have used a solution of iodoform and ether as a laryngeal spray whenever he felt he was hoarse or of weak voice before a performance. He always carried such a spray with him for this purpose. Obviously, no rationale can be established for its use.

THE LOWER RESPIRATORY TRACT

Whereas the practice of otolaryngology does not include the treatment of diseases of the lower respiratory tract *per se*, all physicians are called upon to treat patients with upper respiratory tract infections (nose, nasopharynx, sinuses, throat) who also have involvement of the trachea and bronchial tree. The usual procedure is to prescribe a cough mixture. The greatest error in this regard is the over-zealous use of expectorants, so that coughing is actually stimulated instead of relieved. The purpose of therapy directed at the lower respiratory tract should be threefold: (1) to control and eradicate infection, (2) to remove the contained infected secretions from the tracheo-bronchial tract by expectoration, and (3) to minimize unnecessary and ineffectual coughing so as to spare the patient's energies and reserve.

To eradicate infection it is necessary to employ appropriate chemotherapeutic and antibiotic therapy systematically or by aerosol inhalations, as indicated. To accomplish the last two aims, a properly compounded cough mixture is most valuable. An effective anti-tussic drug (such as codeine, dionin®, hycodan®, or mercodione®)

should be administered in adequate dosage and with sufficient frequency to give the patient rest from protracted and harrassing cough. At the same time, mild expectorants which are not nauseating or irritating to the respiratory mucosa should be included in the mixture in order to bring about liquefaction and loosening of any infected secretion, so that such coughing as does take place will be productive. For this purpose such harsh expectorants as ammonium chloride, ipecac, squill, thicol, etc. are usually contraindicated. It is wiser to prescribe citrates, potassium iodide, lobelia or terpin hydrate in such cough mixtures.

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"THE FRUIT OF LOYAL NATURE AND OF NOBLE MIND"*

LOUIS A. BUIE, M.D.†

We live in an age when all that is human tends to be regarded as something reprehensible. Man has survived the most devastating war of all history. He can claim spectacular victories over his environment. He has made new conquests of the elements and with it all he has learned to kill with amazing facility. With newly applied scientific principles he can deliver destruction with terrifying speed and accuracy. Instead of seeking freedom of mind and soul, he has surrounded himself with fear and suspicion. He looks to the future with trepidation. He is a victim of his knowledge today even as he was once a slave of his ignorance. He is tortured by his inability to live side by side with other men in an atmosphere of peace. Man is afraid of man himself. If he stands upon the brink of self extinction it is not because he has learned too much about his environment but because he has learned too little about himself. He has progressed very slowly in his search for knowledge in the field of human relations.

And now I have the temerity to appear before you today and to attempt to describe to you distinguished physicians something which I believe could be a panacea. And I would beg of you to bear with me if you can, for what I hold forth is not a nostrum. It is nothing, in truth, so concrete as that. It is, rather, an abstraction, a sort of code of behavior. It is a precious thing in any quantity and highly precious at present because it is so rare. Possibly it must permeate the world if the world is to survive.

One does not plead for acceptance of that which is already accepted. I, therefore, need not advocate qualities which are exemplified here among you by right of a heritage more than three centuries old. It is well known to you that in the province of Maryland was established a principle of forbearance toward one's neighbor's views which may well have contributed toward that mastery of the art of living—in religious, intellectual and social aspects—for which this state is renowned. Let it not be thought I imply that all of the high principles with which Maryland began were allowed to persist uninterruptedly exemplified in the behavior of her people. No political pressures from within and from without affected their behavior. When necessary, the men of Maryland became formidable indeed, until the outstanding service of the Maryland Line in the Revolution became memorialized in a pseudonym, and Maryland was called the "Old Line State".

Through all vicissitudes, nevertheless, the principles endured and in this opulent and lovely land, fortunately descending from the mountains by broad waters to the sea, an indigenous culture developed. It has been nourished within this university, the walls of which first were raised early in the last century. So well has it been fostered here that even those who came from without, as I did so many years ago, are reared in the tradition as if they were of the blood. They learn the way and are conscious of

* Read at the Annual Meeting, Medical Alumni Association, Baltimore, Md. June 5, 1952.

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their obligation to maintain it. "Noblesse oblige" is to say that responsibilities persist.

Thus, if one should review the history of the aristocrats of Greece, he will find that the aristocratic way was by no means a path of ease. They had standards which were not accessible to ordinary men, standards well-nigh impossible for men who were obligated to fight for their daily bread. According to their code, an aristocrat must not tell a lie (except in love and war); he must keep his word, never take advantage of another, be cheated in a bargain rather than cheat. He must show perfect courage, perfect courtesy, even to an enemy; a certain magnificence in the conduct of his life, a generous liberality as far as his means could be stretched, and he must take pride in living up to this severe code. Aristocrats subjected themselves as proudly and willingly to the exacting discipline of the gentleman as they did to the rigid discipline of the warrior. High privilege was theirs but it was weighted by great responsibility. The burden of leadership was upon them; they must direct and protect the underprivileged. Nobility of birth must be matched by nobility of conduct.

I have just summarized the opinion of scholars, and I am not one. Nevertheless, despite my incomplete knowledge of the manner in which the centuries have molded the convictions of men, I venture to say that down through the ages this code of behavior which I have in mind, has been accorded its place of importance. Otherwise, springing from the so-called Wisdom Movement of the Near East, there might not have been preserved in the Biblical *Book of Proverbs*, that which reads, "A soft answer turneth away wrath". Nor might we have heard what Shakespeare put into the mouth of the Lord Chamberlain, Polonius, in his precepts to his son. And, furthermore, whatever people in general may think of Lord Chesterfield, men of this age occupy no height from which to look down upon him. And who can say that his preoccupation concerning the manner in which a man should gracefully conduct himself with relation to his fellows did not play an important role in the distinguished political service which he gave to his country? If further proof were necessary, we need only refer to Cardinal Newman, the author of *Lead, Kindly Light*, whose life was almost coextensive with the nineteenth century. He saw fit in his discourses to introduce two well-known paragraphs with this sentence, "Hence it is that it is almost a definition of a gentleman to say he never inflicts pain". And now to come down to the present time; to that century which was borne in on so high a tide of hope but wherein man is now struggling for existence in a whirlpool of degradation; can it not be asked whether, in this time, hope could be renewed if present political opponents of the United States could adopt the philosophy of these great men who have exerted such profound influence on events of history.

And now therefore I, in an attempt to follow after the great minds whose thoughts I have cited, ask your leave to consider, for a few moments, how erring human beings, in the various roles they must assume in this modern day, perhaps can perform their tasks with greater ease and effectiveness than otherwise they could if, in a world which seems no longer to value consideration for others, they insist on conducting their affairs with good manners and with courtesy.

Admittedly, these are times of stress. Stress engenders fatigue and fatigue, impatience. Out of impatience comes altercation, enmity and the search, in unlikely

places, for solutions of problems. Perhaps these are reasons why enlightened men find great obstacles in their paths as they set themselves to the task of maintaining standards, or of elevating them. They are subject to prejudices, insecurity, privation, illness and unfortunate experiences over which they have no control. All of these influence their attitude toward other men and their ultimate role in society. The nature of these obstacles is familiar to everyone. Suffice it to say, there are modern institutions and organizations, and even large segments of our population whose interests men of good will seek to defend, who face with skepticism and even with antagonism the proposals offered as solutions of perplexing problems.

I believe that the people of the world not only are tired of their struggle against hunger, illness and an uncertain future but that they also are tired of strife. Throughout history their lives have been a continuous struggle for survival and they have been guided almost entirely by individual instincts of self-preservation. If this is so, it is particularly desirable now that those capable of leadership learn to function with harmony among themselves as well as in their environment. To this end, the wise leader will consciously deal gently with his colleagues and with others among whom he associates. Very easily he can offend and without intention. He must constantly employ his insight into human nature to determine the other's point of view. From this exercise of his faculties, he will derive the habit of tolerance.

The fully informed man will converse with competent individuals but the knowledge of many of these individuals may be only partial. Often they will entertain notions which they will advocate with confidence and support with arguments which are quite satisfactory to themselves. Many times these arguments may seem worthy of contempt to the soundly based person but he must not reject them with a contemptuous air. He must try to assume the objective position of an impartial inquirer and to seek some means whereby he may determine why, or even whether, his opponent is wrong.

Concerning some questions, the further he searches, the more he may become convinced that no answer is available and that, if these problems do not transcend the limits of human understanding, the acquisition of suitable solutions may at least transcend all present resources. He cannot afford to permit himself to be discouraged by such experiences. He must be willing to make the effort to clarify matters or to explain, fully and courteously, that knowledge which would allow him to provide an answer for the question under consideration is not as yet available.

Such an approach discourages strife and encourages amicable discussion. It is through discussion that experience is analyzed and eventually, we hope, correctly interpreted. I said "eventually" because often the correct interpretation may be delayed while men in a free society experiment and discuss. This freedom of effort, thought and expression probably most of us consider among our greatest strengths and greatest blessings. This freedom, which allows us to pause and to study problems may render us a little tardy. Nevertheless it provides ample time for us to live up to that great precept than which there can be no better guide to proper behavior, "First of all, do no harm".

I believe there is one human endeavor which we can well afford to strengthen, to revive or to inaugurate, depending on our belief as to the state which existed formerly.

I refer to a moral standard which, it seems to me, used to have more force than it has now in guiding individual and corporate conduct.

I have placed great emphasis on good manners and it may seem that to treat of morals as a subtopic under good manners is to interchange the small for the great. But it is the fact that the two are related, not the order in which they are considered, which is important. Tennyson, who had considerable influence in forming our Anglo-American culture, expressed this relationship in words of which I took a part as the title of this address. He wrote

"For manners are not idle but the fruit of loyal nature and of noble mind."

We live in an age of science; an age of dangerous science; an age when science is about to outstrip all other activities. And it is important for us to keep the fact constantly before us that science, unrestrained by moral precepts, can destroy man and all that he possesses and inhabits. Man must learn to live with man and he must know how to conduct himself in the presence of his own capacity for destruction. He must eradicate the forces of insecurity. He must study his environment so that he may think in practical terms of feeding and clothing the destitute people of the earth. He must reach the sick, the underprivileged and the neglected men, women and children of every continent.

I believe it should be possible to evolve a system or a manner of living which, when guided by conscience and the principles of ordinary decency, might be capable of developing these proper human relationships. I am sure that this can be done. In order to accomplish it, we need only to provide the proper human behavior. In each and every human being, if the soul has been lost, it must be re-created. A community soul must be reborn; there must be a national conscience; a native American morality. All of these must be displayed to the world, and at the same time, we must be prepared, with good grace, to accept change in all values.

Change is dependent on knowledge. Knowledge is the product of great labor and often of great sacrifice and it is the advance of ideas by which progress ultimately is determined. Progress itself depends on change. Consequently, it is probable that in the march of ages many different creeds, apparently good creeds, which now exist, are destined to die out and to be succeeded by some which are better. The world has witnessed the beginning of some of them and there is no assurance that it will not see their end. All values which are essential to human progress must sustain the shock and the changes of time.

At all events, man must look forward. If he attended only to the opinions of his forebears and contemporaries, he would create nothing new. The result of such an attitude would be an evident decay of that vigor of character and that audacity of conception and execution which paves the way to achievement. Our duty as men is clear. We shall freshen the fabric of our knowledge. We shall color anew its various parts and harmonize its apparent discrepancies. We shall employ every resource which we possess in an effort to determine what is best for all and, having arrived at a sound conclusion, we shall uphold it zealously, and we may be assured that if it is true, ultimately it will prevail. In addition, we shall urge it with courtesy in order that it may more likely be adopted with willingness. Perhaps tolerance, maintained in an atmosphere of righteousness, persisting through change, may develop into es-

teem and that, in turn, may broaden into something resembling affection for our fellow men.

The safest and most impregnable ground on which social advancement can be founded is the universality of the affections. It is the bond of our common humanity; it is the golden link which joins together and preserves the human species. It is in the acts prompted by those affections that the existence of the highest instincts of our nature is revealed. Affection can warm the coldest temperament and soften the hardest heart. Regardless of how greatly the character of an individual may be deteriorated and debased, this spirit is capable of redeeming it.

The affections even transcend death. And we feel, in the presence of death, that something remains—something which possibly the eye of reason cannot discern but which the eye of affection perceives. If this be a delusion, it is one which the affections themselves have created and we are forced to believe that the noblest and purest elements of our nature conspire to deceive us. Of all the moral sentiments which adorn and elevate the human character, the instinct of affection is one of the most vibrant and profound. It is the choicest of our possessions and bears upon itself the impression of truth.

In fact, there are few fields of human endeavor wherein attention given to the feelings of others can be neglected. This applies even in the realm of politics, wherein many of us have much to learn. Some of us have held aloof from community, state and national life. We have looked with lack of esteem on many whose activities have been confined to political realms. Now it is necessary, however, that we alter our opinion concerning these matters.

In no activity is this deficiency more applicable than the practice of medicine. May I digress for a moment and consider with you the problem of American Medicine today. Medical advance has always been retarded by the oppressive influence of those who are not familiar with the value of investigation, experimentation and the conduct of medical and surgical practices. For years this oppression came from the church. For example, it was not until the 16th century that Vesalius was able to free the study of anatomy from the many prejudices which had surrounded it because of the concept of the sanctity of the human body and its ultimate resurrection. Miguel Servetus, a protege of Vesalius, who discovered that the blood in the pulmonary circulation passes into the heart after being mixed with the air in the lungs, was burned at the stake by order of John Calvin because his anatomic studies were discovered.

Often these oppressive influences have come from the state and this possibility is particularly significant now in our own land when there appears to be a general trend toward socialistic philosophy. For over 20 years there has been carried on in this country a persistent campaign aimed at the establishment of political control of medicine. This plan embodies the menace of step by step destruction of a system of medicine which has given this nation the highest level of health the world has ever known. With fearless minds American physicians have prosecuted a ceaseless search into the unknown for the purpose of conquering disease with the result that since the beginning of the last century the number of years a man may live has been almost doubled.

Under the system of free enterprise Crawford W. Long was able to discover ether anesthesia by application of which the tired lids of pain are enabled to close in the similitude of quiet sleep and the agonies of surgery are banished. Before this great discovery the surgeon had to work with breathless speed. He had to possess a stout heart because of the indescribable anguish which his ministrations caused. Now, operations hitherto undreamed of can be performed. The surgeon can even invade the brain and perform operations on the heart. Surgery invokes all the arts and encompasses all the sciences. The body of a man is the plastic material in which an artist works and no art is worthy of such a medium unless it has in it something of a sacrament. To introduce an unskilled hand into such a piece of mechanism as the human body is a fearful responsibility. The bones, the veins, the arteries, the nerves and the muscles which compose the body of man display more ingenuity in structure than all the architectural works of the ancient Greeks and Egyptians. No wonder he reluctantly sacrifices even the smallest member. Sculptors may chisel away that which required months of toil and then begin anew. The surgeon has no such choice. He must act with alacrity and skill.

Men whose time is occupied with such endeavor find it difficult to devote attention to political problems but the time has long since passed when physicians can limit their activities to the care of the infirm. It is regrettable that this situation exists and it is imperative that the medical profession unite with all good Americans in order to prevent the destruction of a system which is so efficiently protecting their health.

But, I must return to my subject.

I do not believe that human progress is chiefly owing to the wisdom of governments. History has revealed that nations have risen to the noblest heights of intellectual greatness and at the same time have been guilty of moral debauchery. So it was with Greece during the time of Aristotle and Demosthenes and with Rome while Cicero and Virgil lived. Those who control government often are creatures of the age in which they live and are not its creators. Frequently their accomplishments are the results of social progress and not the cause of it. Many times such men are the accidental and insufficient representatives of the spirit of their time. They may defeat the interests of those whom they seek to protect by presuming to raise themselves into positions as supreme judges of national interests. Great political reform or improvement often is not originated by such individuals but by bold and capable thinkers who are outside the governmental establishment.

Thus, as at the time when this university was founded, it is now necessary that the patriot have a political string to his bow. He need not necessarily abandon his profession to run for office. He should, however, know who and what he is voting for; he should keep abreast of events and, if the need comes, he should participate in those events, with the wisdom, courtesy and unswerving courage for which men of this state early, and in succeeding years, have been known.

If, in what I have said, my central thought has ever seemed too tenuous, perhaps I can bind all together by stating my basic conviction. I agree with that philosophy which holds that mankind is more virtuous than vicious and that good acts are of more frequent occurrence than bad acts. We know that cruelty is counteracted by

benevolence. We know that sympathy is excited by suffering. We know that the injustice of some provokes the charity of others and we know that new evils can be and often are met by new remedies.

Accordingly, outstanding qualities of estimable men are these: gentleness and courage, boldness and prudence, tolerance, reverence, confidence, stability, humility, wisdom, patience and honesty. I believe not only that possession of these qualities engenders good manners but that the exercise of good manners furnishes proper soil for the cultivation of these qualities. The two influences working together, not alone, I believe would do much to allay many of the dreads of the world today.

Finally, may I say that you have given me extraordinary pleasure in admitting me to your company today. I am profoundly and humbly grateful to you for the honor you have conferred upon me. Also I am grateful to you for being so attentive to my remarks. I wanted to remind you that certain estimable qualities, commonplace in this region and traditional in this great university, by no means occur as a matter of course everywhere in the world today. Yet they, most assuredly, bear great significance in shaping the destiny of present and future generations. I felt assured, moreover, that my remarks would fall on sympathetic ears, for although your outward lives are those of men of the world, your duties often resemble those of the minister or the priest. You recognize that your lives are dedicated first of all to the service of others. Your influence will equalize the struggle between scientific man and moral man. You will seek and you will find those spiritual values which nourish and glorify the soul of man. You will strive to create a world conscience and thereby advance human dignity everywhere over the earth.

The Mayo Clinic
Rochester, Minnesota

IN PRAISE OF LEISURE*

HENRY J. L. MARRIOTT, M.A., B.M.

For the past few months it has been a solemn duty to encourage hard labor. Now that the race has been run, it seems not unsuitable to sing the praises of leisure.

I would like to take you back two thousand years into the shade of an Italian beech tree, just outside the town of Mantua. There, so the story goes, lay a happy shepherd named Tityrus playing on his rustic pipe. Another shepherd, not so blessed, comes into view driving his weary herd, and as he passes he comments in a wistful voice on the ease which Tityrus is enjoying. Tityrus replies in words which teach us the prime lesson of leisure, "*deus nobis haec otia fecit*"—a *god* gave us this leisure. There in a poetic setting is the pearl of leisure: it is God-given.

But Tityrus has another word for the wise. At first sight he seems to be the picture of idleness. For he was carelessly reclining in the cool luxuriant shadows—in just such an attitude as the gowned graduate envies. But he was not idle. You remember that he was playing on his pipe—he was making music, or, in Virgil's more melodious phrase, "meditating the Muse." He was doing something active and creative, for he had learned the poet's lesson "absence of occupation is not rest."

To make the most of leisure you must have outside interests into which you can throw yourself with enthusiasm. It is true that happiness springs from an "absorption in some vocation which satisfies the soul," but it is equally true that the fullest happiness depends upon soul-satisfying avocations as well. "No man is really happy or safe without a hobby, and it makes . . . little difference what the outside interest may be—botany, beetles or butterflies . . . fishing, mountaineering or antiquities—anything will do so long as he straddles a hobby and rides it hard." In these words Osler expressed the idea that I am attempting to broach this evening.

I think it may be said that there are four main types of avocations open to you. First of all there is the large group of scientific interests to any of which the medical mind turns with little coaxing. It may be worth recalling that the word physician is derived from the Greek *Φύσις* meaning nature, and therefore originally implied not a healer, but a student of nature, a naturalist.

The study of the universe is the best and brightest member of the scientific class. It has been said that the only reason man arose from all fours was so that he could look up at the stars. I wish you would take advantage of your recent change of posture. On the next clear night look up at Polaris, the North Star—the only star of any magnitude that appears to remain stationary in the heavens throughout the year—and reflect that the light which reaches your eye started on its journey shortly before Columbus sailed in this direction. And the pole star is one of our nearer neighbors.

The great and invaluable lesson that astronomy teaches is that of humility. As soon as the mind attempts to soar out across the light years, it feels its insignificance with a most healthy impact.

* Given at the Precommencement Exercises of the University of Maryland School of Medicine, June 8, 1951.

Or turn to the study of paleontology, which fills us with a different form of wonder. Nearby we have the Calvert Cliffs whose interstices boast one of the richest miocene deposits in the world. As you wade in the gentle ripples at the foot of the cliffs your toes hobnob with fossilized sharks' teeth of ten or twenty million years ago, still in perfect repair—in striking contrast with the modern equipment of this assembly:

Yet another subject to which the medical attention can readily turn, but too seldom does, is the thin crust of earth to which we owe our existence. The soil has been brought closer to medicine during the past decade in which, in the words of the Apocrypha, "The Lord hath created medicines out of the earth." But, quite apart from its role as the mother of most of the antibiotics, the importance of the soil is supreme. The seven inch average of topsoil is all that lies between us and extinction, and we are skating on thinning ice. The interrelationships of the hundred million microbes that teem in every teaspoonful of soil, the whole complex and vital subject of soil treatment, and the correlation between the health of the living soil and the health of the plants, animals and humans supported by it, make a fascinating though alarming study.

So much for a sample of scientific hobbies. More valuable in a different way are the purely cultural interests such as music, poetry and painting. Learn to paint, or play, or write by all means, but you can also get much from intelligent looking, listening and reading. "You need not be good at a hobby to have that hobby do *you* a world of good." By reading a small ration of good poetry every night you can cover much ground and you will familiarize yourself with many of the best minds and much of the best thoughts of the ages. A valuable lesson that poetry teaches is what Emerson called "the enormous force of a few words." As a corollary to this we better appreciate the crime of loquacity. Remember the admirable exhortation, so often useful at the bedside, "Look wise, say nothing, and grunt. Speech was given to conceal thought."

Again you can get infinite satisfaction from a study of other men's art or music. Do not study only their compositions, but read about the masters themselves and get to know their lives and characters and the circumstances in which their masterpieces sprang to life. In this way you will develop an interest that will stand you in good stead in times of stress, one which will give you deep inward satisfaction and will make you the envy of your more discriminating friends.

This emphasizes that a hobby must be built around a library—just a modest two or three books are enough to make a good beginning. Often the total cost of a hobby, which gives you hundreds and hundreds of hours of the deepest joy, is the few dollars you invest in the handful of books devoted to it. And you save in the long run; because it is always more expensive to kill time than to fill it.

It is this group of esthetic hobbies that does most for our souls. Nowadays we are seldom watered by the gentle rain of culture in our formal educations. As long as half a century ago, and the situation is much worse today, it was pointed out that the profession had already lost a very precious quality by the neglect of the study of the humanities. It is well worth using a little of your spare time to recapture a measure of that quality.

Then the third group is based upon a personal collection. The act of collecting is not, or should not be, the central aim; rather let whatever you collect be an Ariadne's

thread to lead you forth into the light. If it be stamps or coins let them lead you to the history and geography of nations, as well as to the history of stampmaking or the mint. If it is books you fancy, there is a wealth of romance buried in the annals of the bookbindery if you will but dig for it. Nor will a collection of books necessarily estrange your wife's affections, as the booklovers in the verse

*"vexed their wives and filled their homes
With faded prints and massive tomes."*

Far from being a thorn in your partner's side, the sharing of a hobby can do much to enrich your marriage.

Last and not least are the occupations which combine fresh air and exercise. It is true that chasing butterflies will give you these if you play the game energetically. But in this class I mean particularly those pursuits which owe their charm to a combination of skill and a sense of adventure, against a background of open air and health of eye and limb. Consider with favor such pursuits as sailing, skiing and swimming, and indeed many other outdoor sports. Regular time spent in the open air with your circulations seething is never wasted. It is very good to offer the cells of your cortex a chance to yawn in some fresh oxygen and give their dendrites a stretch.

If you have not already done so, I would suggest that each of you cultivate at least four hobbies, preferably one of each kind, *and ride them hard*. There is ample time in every crowded life for the full development of at least this number, and the harvest reaped will be rich indeed.

Fill every minute with living. It is unhealthy to eat the bread of idleness, for it lacks essential vitamins. In our present world it is difficult to prevent the magazine, the radio and now the television from becoming the staff of intellectual life. Yet a steady diet of spoonfed entertainment must produce a scorbutic or rickety mind. It is not good for any organ that is capable of functioning, to wallow indefinitely in the ease of only passive exercise. And the insidious thing about these patent foods is that the appetite for them grows by what it feeds on.

Listen to what a famous surgeon says about the morning paper. "We should read the newspapers, but not too much or for long. 'News' is the trivialities of the moment, given a silly slant to amuse the breakfast-table morons who make the bulk of the supporters of a multi-million circulation." This is not to say that the moronic slopes should be entirely deserted. The occasional complete change afforded by a truly vegetable hour is in itself a tonic for the mind. Let me emphasize that it is when the idle hour becomes a habit, when the mind feeds only on the cloying sweetmeats of potted entertainment, that the tonic becomes a sedative that drugs our senses.

Addiction to such trivialities is a serious threat to education; an education is well worth acquiring because, as the Greeks were at pains to point out, it is about the only earthly possession that we cannot lose. In the words of Sidney Smith the main objective of education is "to give children resources that will endure as long as life endures; habits that time will ameliorate, not destroy; occupations that will render sickness tolerable, solitude pleasant, age venerable, life more dignified and useful, and therefore death less terrible." Indeed its aims look far into the future.

And so, on this the threshold of your careers it is not too soon to take thought for your gray hairs. It is ludicrous to take out policies for financial security, yet at

the same time to carry no insurance against boredom. It should be your ideal to educate yourselves so that you can always look forward with confidence and really feel that

*"The best is yet to be,
The last of life for which the first is made."*

The time to plan, almost subconsciously, for a happy old age is in youth. If you do not do this "you may find too late, with hearts given away, that there is no place in your habit-stricken souls for those gentler influences which make life worth living."

Give your lives sweetness and light by reading all that can be read in books, in nature, in the lives of the men and women around you. Foster a mind that

*"Finds tongues in trees, books in the running brooks,
Sermons in stones, and good in everything."*

Cherish everything that gives zest to life, everything that widens interests and broadens outlooks—for all these contribute to the strengthening of the real *you* with whom you will have to be content in the later years.

You have a long and glorious heritage. The profession of medicine must always rank as the most noble that man can adopt. In Churchill's words "the spectacle of a doctor in action among soldiers . . . in equal danger and with equal courage, saving life where all others are taking it, allaying pain where all others are causing it, is one which must always seem glorious, whether to God or man." Long even before the days of Hippocrates the physician was valued high indeed, for as Homer put it "a leech is worth many other men." As you know, his words πολλῶν ἀντάξιός ἄλλιον worth many other men, form the motto of our Medical and Chirurgical Faculty.

I am not suggesting that you will each achieve this polyvalence, or even that you *should* achieve it; least of all that you should *think* you achieve it. But it should be your ideal to strive for an excellence which makes you a tower of strength to other men. Remember that your patients will expect you to incorporate the offices of "scientist, healer, priest and prophet," and you must equip yourselves with versatility. Nothing will contribute so much to your all around development as the proper employment of your God-given leisure. Like all God's gifts it must not be wasted.

I know your abilities and so I am not concerned for your success. My special prayer is that you will touch the superlative within still humble hearts. "A golden thread has run throughout the history of the world, consecutive and continuous, the work of the best men in successive ages. From point to point it still runs, and, when near, you feel it as a clear and bright and searchingly irresistible light which Truth throws forth when great minds conceive it." May *you* have a hand in the future spinning of that golden thread.

Mercy Hospital, Baltimore 2, Maryland

EDITORIALS

ANTIBIOTICS IN GYNECOLOGY

That the antibiotics have a definite role to play in the management of gynecologic conditions, no one will deny. The almost miraculous results obtained in acute pelvic inflammation and post-abortion sepsis are ample evidence of their value. Conversely too, many gynecologists, both young and old, have come to rely on these agents to prevent or cure all manner of potential dangers.

Antibiotics should be used only when specific indications exist. Laboratory identification of the offending organism obtained from the vagina, cervix, or uterine cavity abscess not only proves the need for therapy, but by culture and sensitivity tests indicates the drug of choice. In the presence of suspected infection, associated with some underlying disease such as cancer of the cervix, antibiotic therapy is indicated even though a positive culture cannot be obtained.

At the time of operation, gross unsuspected infection should be cultured and antibiotic therapy instituted. The initial agent can be changed if culture reports suggest a more efficacious drug. Post-operative complicating wound infections should be cultured and drainage established prior to the use of antibiotics.

We strongly advocate the judicious use of these agents, for much harm can be brought about by their abuse. Failure to obtain a positive smear or culture in suspected Neisserian infection prior to therapy results in confusion, and often a life time of needless apprehension and distrust.

We have all seen patients in whom the normal bacterial physiologic balance has been so disturbed by antibiotics that the resultant condition presented a grave problem.

Before the era of the "wonder drugs," patients withstood major and minor gynecologic surgery well. The post-operative course was prolonged in less than 2.5 per cent by infection, pelvic peritonitis or other surgical and medical complications. It is in this small group that the antibiotics have their real value, making gynecologic surgery a less hazardous affair.

The antibiotics should be used when proof is at hand to indicate their need and their efficacy in overcoming a specific bacterial invasion has been established. One must constantly remember that at best these antibiotic agents do not destroy the infecting organism. This still depends on the natural defenses of the body.

William K. Diehl, M.D.

MICROBES—ANTIBIOTICS—RESISTANCE

Papers appearing since 1935 on various phases of chemotherapy number in the thousands. Many of these represent reports on clinical studies and a considerable number are concerned with the mode of action of the drug or antibiotic. In spite of the voluminous literature, chemotherapy remains largely as an empirical science. The impact of the clinical application of the science of chemotherapy and the positive results obtained have been so tremendous that immunology and serology as diagnostic and therapeutic tools are being neglected.

Granting for the moment that chemotherapy has been effective in controlling certain acute diseases, there remain numerous infections of rickettsial and viral origin, as well as chronic diseases, in which chemotherapy has suffered its most conspicuous failures. The successes of chemotherapy may have blinded some of us to the failures, weaknesses, and potential dangers. Thus, we are not always aware of problems arising from the use of chemotherapeutic agents where properly indicated, or worse from their irrational indiscriminate use. Agents are being employed that react with biologic systems (parasite and/or host) on a physico-chemical basis. Furthermore, this interaction often involves the genetic potentialities of the biologic systems with the resulting consequences.

One of the first problems to arise, whether or not the drug is being used properly, is the occurrence of drug fast or resistant strains of microorganisms. The consensus is that resistant strains are arising continuously in a drug susceptible population of bacteria as spontaneous random mutations. Population dynamics masks the presence of the resistant cells and only by the selective action of the drug do the resistant mutants survive and emerge from the drug inhibited population. The resistant strains may differ from the susceptible only in drug resistance, with no change in virulence. Furthermore, the degree of resistance obtained may be in excess of the upper clinical level of the drug in which case use of the drug is contraindicated. On the other hand, the resistant strain may become avirulent; however, with disappearance of clinical signs and subsequent withdrawal of the drug, the resistant organisms may revert to the original virulence with a consequent recurrence of the disease. Regardless of the origin of resistance in those cases where resistance is not permanent, discontinuous or intermittent use of the drug may be indicated. In contrast, permanence of resistance calls for other measures. Thus, another chemo therapeutic agent to which the resistant strain is susceptible may be used.

Though cross resistance is not unknown, development of resistance to one drug usually does not confer resistance to another. However, Kaipainen (1951) in an extensive study of cross resistance to Chloromycetin®, aureomycin® and terramycin® has shown that development of resistance to one of these antibiotics confers resistance to the other two.

Another measure used to circumvent resistance is the simultaneous use of two or three drugs based on the assumption, pointed out above, that drug resistance is specific and cross resistance the exception. While the results of the application of this rationale have been good, certain findings indicate the need for caution in the use of this procedure. Schweinburg and Rutenberg (1950) report that when four sulfonamides were used individually or in the various combinations possible, the *in vitro* sensitivity tests used resulted in 27 per cent of the Gram-positive cocci and 95 per cent of the Gram-negative bacilli being less sensitive to mixtures than to single component sulfonamides. According to these authors, on the basis of the evidence available, the superiority of a mixture cannot be assumed, and is in fact unlikely in the case of most Gram-negative bacillary infections.

Recently, considerable evidence has accumulated that when two or more different chemotherapeutic agents are combined an antagonistic action actually results. Lankford and Stacey (1949) studied the *in vitro* bacteriostatic effect of combinations

of aureomycin-penicillin and aureomycin-streptomycin on staphylococci, and concluded that, depending upon relative drug concentrations, synergistic, additive, indifferent, or antagonistic effects were obtained. Spicer (1950) has demonstrated an *in vitro* antagonism between certain antibiotics. According to this author, combination of an antibiotic of low activity with one of high activity results in interference with the activity of the latter. Jawetz and Speck (1950) as a result of their studies of antibiotic combinations and the resulting antagonism, conclude that "if antagonistic effects between antibiotic agents play any role in clinical practice, it may become necessary for physicians to use such drugs only for specific indications and abandon 'shot-gun therapy'."

The degree of stability or permanence of resistance has been referred to previously. In this connection and also in the light of the combined use of two antibiotics the observations reported by Herrmann and Steers (1952) may have clinical significance. They find that a strain of *Escherichia coli* trained to grow in a concentration of chloromycetin equal to its maximum solubility (2 mg. per ml. of broth) is continually giving rise to chloromycetin sensitive cells. Upon withdrawal of the antibiotic, these sensitive cells resume division and soon replace the resistant population. The combined use of chloromycetin and penicillin results in the destruction of the resistant cells by penicillin. Though penicillin alone will destroy both sensitive and resistant cells, in combination with chloromycetin the sensitive cells appear to be unaffected by penicillin, since withdrawal of both antibiotics results in multiplication of a population sensitive to both antibiotics. Since neither of these antibiotics appears to affect non-dividing cells, the clinical significance of these findings would be the suggestion that one member of a combination of antibiotics should be bactericidal for resting cells.

Drug resistance is not the only problem posed by chemotherapy. The drugs used in controlling bacterial infections are usually incapable of affecting diseases caused by pathogenic yeasts and molds. Furthermore, the normal biologic balances existing among the bacterial flora of the various regions of the body can be upset by these drugs. Certain microorganisms, which by their activity may serve to hold in check pathogenic opportunists are suppressed by the chemotherapeutic drug, thus permitting the pathogenic opportunist to increase in sufficient numbers to produce disease.

Sensitivity of certain people to sulfonamides is a well known phenomenon. The solubility problem posed by certain sulfonamides has been partially solved either by using a sulfonamide of high solubility or by using several sulfonamides in combination at individual concentrations well below their solubility limit. The assumption that since susceptibility to one sulfonamide carries susceptibility to others and therefore the inhibiting effects of combinations of sulfonamides are additive will need to be re-examined in the light of the evidence pointed out earlier in this paper, particularly in the case of Gram-negative bacillary infections.

Different areas of the body may acquire a saprophytic or parasitic fungal population. These organisms manifest their activities at their normal loci on or in the body. Products of these activities may sensitize the host. For this reason sensitivity to antibiotics may arise. Thus where a history of fungal infection exists the proper pre-

cautions should be observed before administering an antibiotic. According to Flaxman (1951), 107 drug fatalities have been reported in the literature since December, 1946. These deaths were not from poisonings of the accidental or suicidal type, but occurred in the use of regularly advised and prescribed drugs. Four of the deaths caused by sulfonamides, and among the parenteral medications, the antibiotics caused the largest number of deaths—eleven. Six resulted from the use of penicillin and five from streptomycin. The author urges that "certain precautions not be overlooked in their use. A history of an allergy, of previous sensitization to an antibiotic, the appearance of a rash, or the presence of cardiovascular or neurologic syphilis calls for great caution in the administration of penicillin. Renal or hepatic insufficiency is a probable contra-indication in the use of streptomycin."

In summary then, in view of the evidence reported above, it would be desirable to perform a bacteriologic diagnosis not only to determine the etiology of the infection, but also to assay the degree of sensitivity of the etiologic agent to the drug or drugs of choice; (2) to determine whether or not the patient's history indicates sensitivity to chemotherapeutic agents; and (3) avoid the irrational indiscriminate to use of these drugs.

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Edward Steers, Ph.D.

CLINICO-PATHOLOGIC CONFERENCE

From the Case Histories, University Hospital, Baltimore

CLINICAL HISTORY

Sudden, substernal pain induced by exercise led to the hospital admission of a 5 year old colored male. He had been treated for pneumonia at the age of 3 months. At that time, a systolic murmur, perceptible from the manubrium to the xyphoid process, had been heard at the left sternal border. After a hospital stay of 5 months, the patient had been discharged with the recommendation that he be treated at the Pediatric Out-Patient Clinic. He had been dyspneic and often had squatted to catch his breath. His activity had been restricted. Before admission the patient had suffered frequent upper respiratory infections. He had had no hemoptysis, cough, abdominal pain, or dependent edema. The history of his birth and neonatal period was normal. Although his development was said to be retarded, he had walked and talked before the age of 18 months.

At the time of admission, he appeared anxious but not alarmingly ill. His stature was shorter than most children at this age. The only evidence of cyanosis was seen in the nailbeds. The ocular fundi were normal. The neck was not rigid. The auscultative and percussive characteristics of the lungs were normal. The cardiac rate was 100 per minute and the rhythm was normal. By percussion, the heart was judged to be enlarged. The right border was displaced laterally and the left border, as indicated by the precordial impulse, was normal. A high pitched, systolic murmur heard in the left third interspace radiated along the entire left sternal border. A systolic thrill corresponded to this murmur. At the apex of the heart, a thrust was palpated. The murmur could be heard from the back. The remainder of the examination was fruitless save for the discovery of digital clubbing.

The laboratory reported the hemoglobin concentration to be 154 per cent (22.4 gm.) and an erythrocyte count of 10.35 millions per cubic millimeter. Blood leucocytes numbered 4200 per cubic millimeter; volume of packed erythrocytes was 75 millimeters. Urine analysis was normal. Cultures of the nasopharyngeal secretions were productive of *Diplococcus pneumoniae* and hemolytic *Staphylococcus albus*. An electrocardiogram indicated right axis deviation.

Fourteen days before death, Dr. Bing at the Johns Hopkins Hospital catheterized the heart of this patient. He found an increasing gradient of pressure from the pulmonary artery to the infundibulum and thence to the right ventricle. The oxygen concentration of the blood in the pulmonary artery and its right and left branches and the right ventricle was lower than in the vena caval blood. Blood taken from the brachial artery was unsaturated.

During an operation attempted for the correction of a cardiovascular deformity, respirations and heart action were arrested. Myocardial fibrillation was noted. Resuscitative attempts were futile.

CLINICAL DISCUSSION

Dr. Sidney Scherlis: A systolic murmur, at the age of this patient, summons to mind interventricular septal defect and perhaps patent ductus arteriosus. Among

the lesions which readily cause cyanosis, we might consider pulmonic stenosis. If this child had cardiac disease, the sudden onset of substernal pain might have meant pulmonary embolus or anomalous coronary arteries. Perhaps the coronary arteries arose from the truncus arteriosus or from the pulmonary artery instead of the aorta. The substernal pain might have been caused by a coronary insufficiency, because relatively unoxygenated blood was being pumped through the coronary vessels. The child might have had, in addition, an hypertrophied heart.

There is no statement made about the maternal health during the foetal phase of the patient's development. Underdevelopment might, of course, result from conditions unrelated to the heart, but retarded development is quite common in the face of congenital cardiac lesions, such as patent ductus arteriosus. We have then the diagnostic problem posed by an underdeveloped child who has cyanosis and a heart murmur. We know that when a systolic murmur is associated with a thrill it usually indicates heart disease. Both the thrill and the murmur reflect the strength of the force which initiates the thrill and murmur. Transmission of murmurs in patients who are so small is not usually diagnostic because the transmission depends upon the intensity of the murmur and the thickness of the chest wall.

Clubbing of the fingers was observed in this patient. Digital clubbing because of pulmonary or cardiac disease results from an increase in fibrous tissue in the terminal phalanges. When the defect is circulatory, one can have, not only fibrous tissue increased, but blood volume also. This patient had a polycythemia.

A child who has a heart murmur, cyanosis, clubbing of the fingers and toes, and polycythemia probably has pulmonic stenosis or tetralogy of Fallot. We must consider also transposition of the great vessels. It is suggested that the roentgenographed pulmonary vascular markings be observed, for if the markings are obscure, faulty blood flow may be the reason for it.

The roentgenograph of this patient's chest gives me the impression that the size of the heart is more than normal.

In most patients, stenosis leads to dilatation of the involved vessel. Even so, in some patients who have pulmonic stenosis, one may find an absence of the fullness in the left upper cardiac border. The absence of fullness, therefore, does not rule out the presence of pulmonic stenosis. The contour of this heart is abnormal. There seems to be more prominence of the right border than usual, but the upper left border is more prominent than the right. This film was taken during full expiration in which the heart is pushed upward and the trachea, to the right. There may be something in the upper mediastinum which, when expiration takes place, pushes the trachea laterally. The anterior border of the heart touches the chest wall as a result of enlargement of the right ventricle. I think that the right auricle also is enlarged. If there were enlargement of the left auricle, the esophagus would be displaced posteriorly.

An interventricular septal defect might cause enlargement of the right auricle and right ventricle. Pulmonary hypertension also may cause right ventricular and auricular enlargement. If the patient were older, one might wonder if he had pulmonary hypertension. At the age of this patient, it is unlikely. Pulmonic stenosis alone, without associated lesions, would not cause the degree of cyanosis, clubbing and murmurs

seen in this patient. The most commonly associated contributory lesion is one in which there is pulmonic stenosis and an over-riding of the aorta, so that the aorta received blood from both sides of the heart.

FIG. 1



FIG. 2

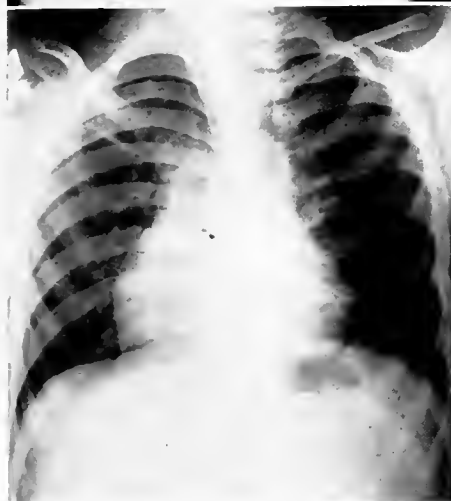


FIG. 3

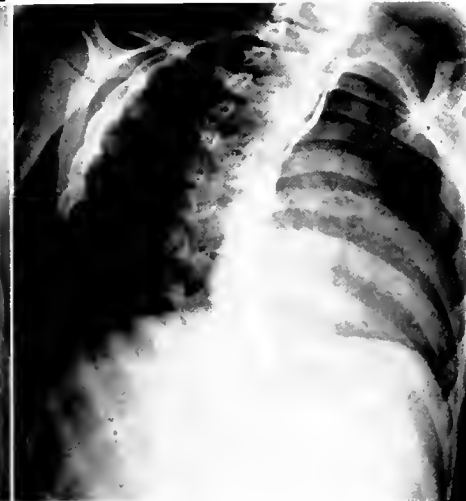


FIG. 4

FIG. 1. Teleoroentgenogram taken at age 2

FIG. 2. Teleoroentgenogram taken at age 5

FIG. 3. Complete view of thorax taken at age 5

FIG. 4. Complete view of thorax taken at age 5

The studies at Hopkins mean to me that there is a lesion forming a cameral area such as an infundibular chamber between the pulmonary artery and the body of the right ventricle. I think experience thus far has shown that most patients who have pulmonic stenosis have infundibular stenosis rather than a valvular stenosis.

The changes in the oxygen saturation of the blood are suggestive of several lesions.

If one had a defect between both auricles, one would expect that as the catheter passes the defect, a higher oxygen saturation would be noted. The oxygen saturation would be lower in the superior vena cava. The oxygen saturation of the blood in the right pulmonary artery, left pulmonary artery and right ventricle of this case was much lower than in the superior and inferior vena cava and right auricle.

One has to account for the drop in the arterial oxygen saturation when the blood goes into the right ventricle. Sometimes, when a very severe degree of pulmonary stenosis exists, the oxygen saturation in the pulmonary artery may be extremely low. This is because the catheter might occlude the orifice so that the oxygen diffuses out of the blood delayed in the right ventricle. It is possible that the pulmonary vein empties into the right side of the heart. This possibility is remote. My final diagnosis in this patient is congenital heart disease, pulmonic stenosis and an overriding aorta associated with an interventricular septal defect.

PATHOLOGIC DISCUSSION

Dr. H. R. Spencer: The operative procedure in this case consisted of an attempt to relieve the stenosis that was believed to exist in the pulmonary ring or in the pulmonary infundibulum. The heart was entered through the wall of the right ventricle.

At autopsy, there was approximately 200 cc. of bloody fluid in the left hemithorax. The left lung was atelectatic. A recent sutured incision was seen in the parietal pericardium.

When the heart was examined, a recent incision measuring .8 cm. in length was found in the wall of the ventricle at the base of the conus arteriosus. The pulmonary artery and aorta were normal. There was a shallow cut in the intima of the pulmonary artery. The wall of the right ventricle was hypertrophied. It measured 1 cm. in thickness. The wall of the left ventricle measured 1.2 cm. in width. The pulmonary ring and valve appeared normal, but beginning at a point 2.2 cm. below the ring the infundibulum was stenotic. The orifice measured about 3 mm. in diameter. There was a shallow operative slit through the endocardium and adjacent muscle at the area of stenosis. An interventricular septal defect measuring 2 cm. in diameter was found just beneath the aortic ring. The foramen ovale and ductus arteriosus were closed.

The anatomic diagnosis was: *Pulmonary stenosis, infundibular; interventricular septal defect; right ventricular hypertrophy; thoracotomy wound, recent; operative defect, right ventricular wall; atelectasis, left lung; hemopneumothorax, left.*

BOOK REVIEWS

Trends in Gerontology. Nathan W. Shock, Stanford, California, Stanford University Press, 1951, 153 pp. \$2.50.

In this book, the author states that aging begins with conception and ends with death. He outlines four major categories of gerontology: (1) The general biology and physiology of aging; (2) Psychological changes with age; (3) Ethological deviations and disease processes; (4) The socio-economic problems of an aging population. The Biology of Aging includes studies on heredity, age changes in cellular metabolism, changes in structure and function of the body as well as the problem of maintaining integration of all organ systems in the animal. The book contains many graphs and charts showing rather accurately the retirement, health maintenance, living arrangements, education, community programs for the aged, research and economics. In this excellent survey, Dr. Shock brings rather forcefully to our attention a great many details that the aging of our population is presenting and will in the future present more significantly vast problems which will have a very great impact upon our national life and economy as well as upon the practice of medicine. The book is well documented with references to many outstanding pieces of literature and surveys. It should be read not only by physicians but by sociologists, economists, legislators and others directly concerned with the problems brought together in this volume.

JOSEPH G. BIRD, M.D., PH.D.

Histopathologic Technic. Aram A. Krajian, Sc.D., and R. B. H. Gradwohl, M.D., 2nd edition, pp. 362. The C. V. Mosby Company, St. Louis, Missouri, 1952. Price, \$6.75.

This is the second edition of a standard textbook for students and laboratory directors, first published in 1940, as Krajian's *Histologic Technic*. Thus, the new text is slightly altered so as to include a broader coverage of pathologic technics now in common use. The authors discuss not only standard procedure and technic but improved methods for bacterial study and for demonstration of spirochetes in tissues. A discussion of the Papanicolaou technic is given, although perhaps the authors could have deleted the section on diagnosis which is incomplete. They devote extensive space to the care of microtome knives but omit the discussion of the latest automatic equipment for their maintenance. Microtomes are also discussed, but the illustrations are limited to only a few of the various makes.

The section of histologic stain is very inclusive and includes the luxury of a number of color plates. Quite inappropriately, a chapter on botanical microtechnic is introduced in between the general discussion of staining procedures and the inclusive section on neuropathologic technic by C. B. Courville. This chapter could have well been included with the miscellaneous methods at the end of the volume.

The various technics for staining are well indexed; however, many of them have received but a cursory treatment. It might be valuable for the authors to include with them an appropriate footnote which would give the reader a reference in greater detail which is sometimes necessary where modifications of a stain are being considered.

In general, the book appears inclusive, useful, and compact, yet not too voluminous. Attention appears to have been given to those problems which are the most acute and the selection of stable, foolproof technics appears to have been both inclusive as well as practical. The book can be recommended for student technicians for the inclusion in any histopathologic laboratory, and as a general textbook and reference for the pathologist.

J. A. WAGNER, M.D.

Primer of Allergy. By Warren T. Vaughan, M.S., M.D. Third Edition. Revised by J. Harvey Black, M.D. Cloth. Price, \$3.50. pp. 175. Illustrations by John P. Tillery. The C. V. Mosby Company, St. Louis. 1950.

This little volume, written for the patient but containing much of value for the physician not primarily interested in allergy, reflects the author's broad scholarship. Because of his knowledge and because of his ability as a writer, he has found it possible to reduce the complex subject of allergy

to an engaging simplicity that is, at times, remarkable. The reviewer believes that this attempt to make allergy clear for the lay victim is the most successful one thus far offered. Dr. Black has skillfully included advances in knowledge that have occurred since the publication of the second edition in 1943 without disturbing the integrity of the text previously offered.

The book contains 175 pages, is $5 \times 7\frac{3}{4}$ inches in size, making it small, compact, and readily carried by the patient for constant reference. There are eleven chapters, the first three being an attempt to orient the patient, in a general way, to the meaning of the term allergy.

The next seven chapters discuss, in detail, by use of a rather involved analogy to a nation at war, just what happens in an allergic individual and why he is different from nonallergic individuals. This is very effectively done.

The last chapter outlines, rather minutely, what the patient must do to assist the physician in controlling his allergy.

One of the author's opinions seems questionable to this reviewer, namely, that one-half of all positive skin tests to foods are clinically significant. His optimism in this regard is shown on page 150 where he suggests that all reacting foods be eliminated from the patient's diet and, then, states: "As soon as adequate relief is obtained you may try exposure to some of the prohibited substances to see whether they are actual causes of trouble."

This is an excellent book for the patient, but its use will require further explanation by the physician concerned as he may well not accept without question all of the ideas advanced by the author.

HOWARD M. BUBERT, M.D.

Principles and Practice of Obstetrics. *J. P. Greenhill, M.D. W. B. Saunders Co.; 1020 pp. (illustrated); 1951. Price \$12.50.*

A continuing monument to the great Joseph B. DeLee is the Tenth Edition of his "Principles and Practice of Obstetrics" as revised by Dr. J. P. Greenhill. In this latest edition, the entire volume has been largely rewritten and brought up to date. Fortunately, this revision is not limited in scope with particular reference to varieties of management of any one problem. Various opinions are presented along with the author's.

Several of the chapters have been written by physicians other than the author, who are outstanding in their particular field of obstetrics. This adds to the vitality of the treatise as well as to its value. New chapters have been added in bringing to the volume special consideration to the psychology of pregnancy, labor and the puerperium and to shock in obstetrics. All the revolutionary changes in obstetrical practice are evaluated in light of the use of the antibiotics during labor and the puerperium. Many new illustrations have added to the beauty and content.

The volume is complete, easily read and can be recommended to the student and the occasional obstetrician as well as the more advanced members of the profession in this field.

D. FRANK KALTREIDER, M.D.

A Classified Bibliography of Gerontology and Geriatrics. *Nathan W. Shock, Stanford, California, Stanford University Press, 1951, 599 pp. \$15.*

This volume with more than 18,000 references to the literature of the study of aging is surely a bibliography without text material. The references are grouped into the following main sections: biology of aging, organs systems, geriatrics, psychological processes, references, lay texts, non-living systems, popular articles, research methods, organizations, programs and institutes.

Probably every important article written on the many aspects of this subject have been cited in this monumental work. The reviewer's complimentary copy of this volume will be given to the Library of the University of Maryland School of Medicine.

JOSEPH G. BIRD, M.D., PH.D.

Clinical and Roentgenologic Evaluation of the Pelvis in Obstetrics. *Howard G. Moley, M.D., M.Sc., pp. 119, 68 figures; W. B. Saunders Co., 1951, Price \$2.50.*

Up until 20 years ago most interest in the morphology of the female pelvis was shown by anthropologists. The classification by Turner had been accepted for a long time. In the early 30's Caldwell and Moley first published a beautiful treatise on pelvic classifications, dividing the female pelvis

into four major divisions, the anthropoid, the gynecoid, the android and the platypelloid. Moloy for the next twenty years has been an assiduous student of the female pelvis, and his contributions have been of great value to obstetricians.

This volume is a compendium of twenty years research on this subject by Moloy. In this monograph he considers from a practical viewpoint, the morphology and anatomy of the pelvis and its relationship to labor, forceps operations and breech deliveries. He has recently suggested an intriguing method of roentgenologic study to determine cephalo-pelvic disproportion before labor and its worth will be keenly anticipated. A very valuable section is his clinical evaluation of the pelvis.

The monograph is concise, beautifully illustrated, and well written. It will be a valuable addition to any obstetrician's library.

D. FRANK KALTREIDER, M.D.

The Mask of Sanity. *Hervey Cleckley, M.D., C. V. Mosby Co., St. Louis, Mo., 2nd Edition, 1951.*

The subject of this book, the psychopathic personality, has always provoked considerable discussion among psychiatrists. There has been, and still is, a lack of unanimity of opinion with regard to the etiology, the diagnostic criteria, the clinical course, the methods of therapy and the prognosis of this disorder. So many psychiatrists have labelled almost every conceivable form of antisocial behavior, as well as other diverse behavior patterns as psychopathic, that the diagnosis has been referred to as "the psychiatric wastebasket" and hence valueless. As with all other poorly understood medical and psychiatric illnesses practically every therapeutic method conceived in recent times has been applied to the psychopath, with negative results.

The first edition of the Mask of Sanity, published ten years ago, succeeded in clarifying the characteristic features of the psychopathic personality. As such it was a worthwhile addition to the psychiatric literature. This second edition, patterned after its predecessor, contains several notable additions and improvements, which justify its inclusion in the library of all those whose work brings them in contact with the psychopath. A very extensive bibliography, more selected case studies, and an interesting discussion of the legal aspects of psychopathy make this latest edition of The Mask of Sanity most informative and timely. This book is recommended for general practitioners, psychiatrists, clinical psychologists, social workers and jurists. No one can read this book without gaining a new insight into the problem of the psychopath.

FRANK J. AYD, JR., M.D.

Metabolic Methods. *C. Frank Consolazio, Robert E. Johnson, M.K.D. Phil., and Evelyn Marek, M.A. 471 pages, illustrated. St. Louis, Mo., C. V. Mosby Co., 1951. \$6.75. Size (7 x 10 x 1 in.).*

This volume presents a remarkable amount of material in an unusually readable form. The authors have presented a group of methods and procedures which they have found useful over a period of 15 years of research on various aspects of mammalian metabolism. The methods have been chosen on the basis of simplicity, reproducibility, time required for their completion, and size of sample. Preference has been given in most cases to those methods using the small samples. The methods are described in detail and precaution essential to the satisfactory completion of the tests are included.

The volume is divided into eleven sections. Following the introduction and about ten pages devoted to the general problem of the collection and storage of specimens, there is an excellent presentation of instrumentation and volumetric analysis. This includes general principles of spectrophotometry, fluorometry and flame photometry and use of various types of balance. The preparation of primary acid and base, and of agents frequently used in oxidation-reduction methods are given. A discussion of different types of quantitative glassware and the tolerances established by the U. S. Bureau of Standards, together with practical information on brands of glassware. Illustrations of common pipettes, syringe pipettes, and various types of microburettes is useful to those individuals whose experience is limited.

The next section includes over sixty methods for the determination of minerals, nitrogenous compounds, carbohydrates, fats, vitamins, hormones, enzymes, pigments and of ion concentration as applied to the analysis of tissues, blood, urine feces, and food.

The fifth section of about 15 pages presents the microbiological determinations of seven substances. This is followed by the longest section (a hundred pages) on physiological measurements. This in-

cludes the determination of blood and respiratory gases; respiratory metabolism; pulmonary measurements; and the determination of plasma, blood, and extracellular volumes.

The next chapter, probably of the least general interest, deals with methods suitable for field studies. The following twenty-five pages are devoted to clinical laboratory methods, limited for the most part, to function tests. The volume concludes with a series of tables of miscellaneous data; atomic weights, conversion tables, and the most extensive tables this reviewer has seen in a comparable text on the composition of whole blood, plasma, urine and feces. Each section is concluded by an extensive list of references.

This should be a valuable addition to anyone interested in the biological and medical sciences as it contains more practical information than is usual in a single volume.

M. ANDERSCH, PH.D.

MEDICAL SCHOOL SECTION

DONORS TO AMERICAN MEDICAL EDUCATION FOUNDATION

LEADING ALUMNI ASSIST SCHOOL OF MEDICINE

The American Medical Education Foundation has recently released the names of donors to the Foundation for the year 1952. From January 1, 1952 through May 1, 1952 the following contributed to the American Medical Education Foundation. As reported in previous editions of the Bulletin, substantial contributions have already been received from the Foundation and the National Fund for Medical Education by the Dean's office.

The School of Medicine desires to publicly acknowledge herewith the generosity of the following contributors.

Dr. Robert H. Dreher	Dr. William L. Guyton
Dr. Archie Robert Cohen	Dr. S. P. Balcerzak
Dr. Benjamin H. Long	Dr. Karl J. Myers
Dr. M. H. Schneiman	Dr. Richard C. Allsopp
Dr. C. E. Imbrie	Dr. George H. Yeager
Dr. Arthur A. Cope	Dr. Samuel E. Ganz
Dr. H. Boyd Wylie	Dr. William H. Pomeroy
Dr. Samuel Benjamin Wolfe	Dr. Russell A. Stevens
Dr. Joseph John Bowen, Jr.	Dr. D. J. McHenry
Dr. Albert E. Goldstein	Dr. Robert W. Farkas
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Dr. Robert Lartz	

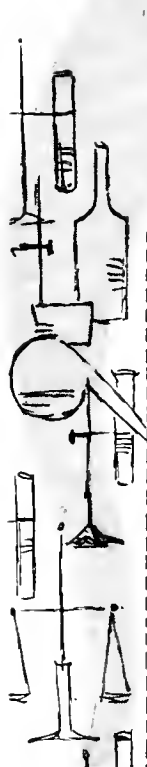
Printed below is a notice telling how to contribute to the American Medical Education Foundation and a convenient coupon for designating your contribution and directions for mailing. The continuation of a satisfactory and progressive medical education program requires the continuing attention and contribution of all physicians concerned.

A. M. E. F. NEWS

Above is printed a list of the first contributors to the American Medical Education Foundation drive for 1951-52. The School of Medicine has already received substantial contributions which have been put to good use for the advancement of the School of Medicine. There is much yet to be accomplished. As an alumnus of the School of Medicine, University of Maryland, a contribution to your Alma Mater is most earnestly solicited. The coupon printed below can be used in transmitting this contribution to the American Medical Education Foundation.

Remember: All contributions are fully deductible for tax purposes. You may designate the School of Medicine University of Maryland as the sole recipient of your donation, or you may divide it among the schools of your choice. Your donation will be used in its entirety for medical education.

there's much to do in 1952.



AMERICAN MEDICAL EDUCATION FOUNDATION

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TELEVISION PROGRAM CONTINUES

Due to the popularity of the current television series "Live and Help Live" being presented over station WBAL-TV, it has been decided to continue the telecast during the summer months at the same hour, 10 to 10:30 P.M. EDST.

MEDICAL LIBRARY NOTES

The library appreciates the books and journals presented by the following donors in the period between February 1 and April 30, 1952.

Dr. Conrad Acton
Dr. Edwin K. Ballard
Dr. Joseph C. Bird
Mr. R. A. Douglas
Dr. Frank W. Hachtel
Dr. Arthur M. Kraut

Dr. R. T. Parker
Dr. John E. Savage
Mr. A. C. Smoot, Jr.
Dr. W. W. Walker
Dr. H. Boyd Wylie
Dr. George H. Yeager

Dr. Edwin K. Ballard, class of 1887, recently gave to the Medical Library a generous portion of his personal collection of medical books. Such thoughtfulness on the part of our alumni is most gratifying.

Mrs. Florence R. Kirk, of the library staff, gave a paper on interlibrary loans at a regional meeting of medical librarians in Washington the end of March, 1952. Mrs. Kirk's paper was of such interest that it has been requested for publication in the *Bulletin of the Medical Library Association*.

The library recently received and filled an interesting request from the National Foundation for Infantile Paralysis. The Foundation asked for a copy of the article "A Probable Case of Infantile Paralysis in Ancient Egypt" which appeared in the *Hospital Bulletin of the University of Maryland* in 1912 (volume 8, page 192). The author, Ejnar Hansen, graduated from the University of Maryland School of Medicine in 1904. According to the statement of the National Foundation, this article was requested for use in a motion picture to be made for distribution in schools and colleges throughout the United States.

MERCY HOSPITAL SECTION

Dr. Edward R. Dana, Chief of Radiology, has announced that his department is now approved by the American Board of Radiology for one year's residency in Roentgenology.

The Post Graduate Training Subcommittee, under the direction of Dr. William L. Garlick, has inaugurated a weekly "Calendar," which includes a listing of the various classes, conferences, seminars and ward rounds held daily at Mercy Hospital. This calendar is widely distributed and has stimulated interest in the educational curriculum.

"Pillow Radios" are a new addition to the rooms and wards at Mercy. Over 200 have been installed which have not only served as a great entertainment to the patient, but have also resulted in a more quiet atmosphere on the halls.

Dr. Kirk Moore, Johns Hopkins, class of 1944, recently joined the Surgical Visiting Staff.

The annual Visiting Staff dinner for doctors and their wives was held on Tuesday, June 10, 1952, at 6 P.M. in the hospital cafeteria.

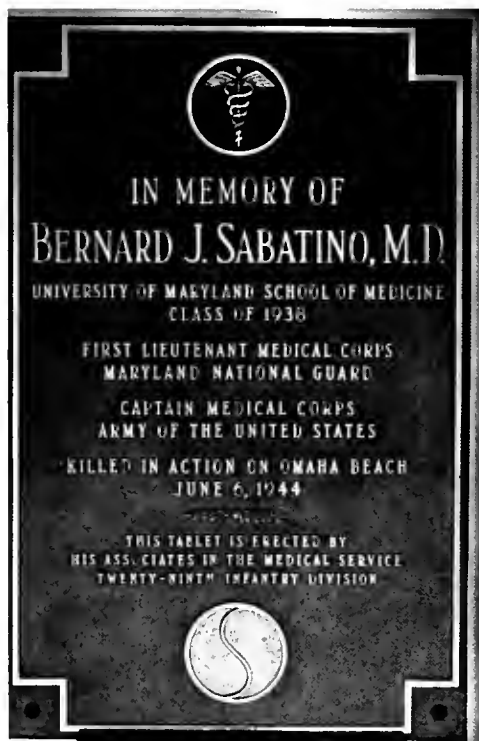
At the annual meeting of the Medical and Chirurgical Faculty of Maryland in April, Mercy Staff doctors were well represented on the slate of Nominations for 1953. Dr. Maurice C. Pincoffs is President-Elect for 1953; Dr. Walter D. Wise, Councilor (1955); Dr. William L. Garlick, Committee on Scientific Work and Arrangements; and Dr. I. Ridgeway Trimble, Finney Fund Committee (1957).

29th Division Doctors Present Memorial to School of Medicine

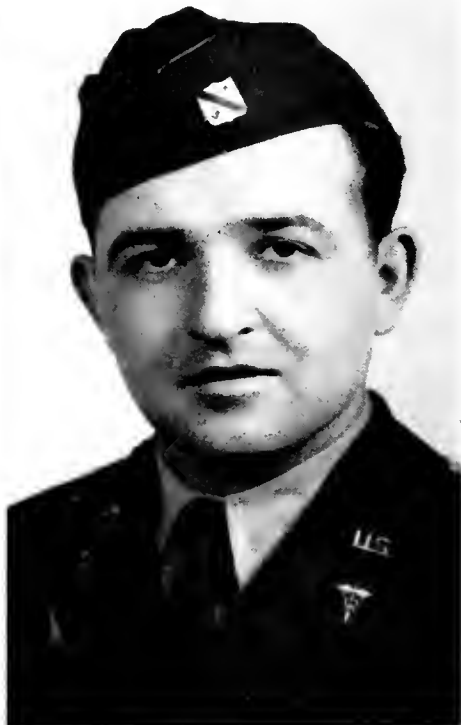
SABATINO MEMORIAL DEDICATED

On Thursday, June 5, 1952, following the annual meeting of the Medical Alumni Association a tablet was dedicated to the memory of Dr. Bernard J. Sabatino, class of 1938. Present at the unveiling ceremonies were Dr. William H. Triplett, formerly chief surgeon of the 29th Division and former Commanding Officer of the 104th

Medical Regiment. Dr. Triplett introduced Mr. Melvin Sherr who was formerly Sergeant Major in the 104th Medical Battalion, the organization in which Dr. Sabatino first served. Mr. Sherr then unveiled the tablet. Additional remarks concerning Dr. Sabatino were given by Dr. Edmund Beacham, formerly Surgeon of the 29th Infantry Division and Dr. John M. Scott, of Baltimore, Maryland, President of the class of 1938. The Rev. Leo J. McCormick, Ph.D., Superintendent of Parochial Schools in Baltimore and Washington, spoke on the character and personality of Dr. Sabatino and closed with the benediction.



VIEW OF TABLET



DR. BERNARD J. SABATINO

RESIDENT STAFF NEWS

Dr. Juan Z. Niccoli has cancelled his contract as Junior Assistant Resident Surgeon. Replacing him will be Dr. Ernani V. Certeza from Manila, Philippines. Dr. Certeza is a graduate of the College of Medicine and Surgery, University of Santo Tomas, 1949. Dr. Martina Tirona-Certeza will accompany her husband to Mercy Hospital for a Residency in Pediatrics. She is also a native of the Philippines and a graduate of the same University.

Two new interns now rotating on the resident staff, are Dr. Michael Kevin Quinn and Dr. Carlos Rodriguez. Dr. Quinn is from County Cavan, Ireland and a graduate of the University College, Dublin, in 1945. Dr. Rodriguez is a Peruvian, graduating from the University of Munich, Germany, in 1940.

Arriving on July 1, 1952, for his internship is Dr. Robert J. Lyden, a graduate of the University of St. Louis, class of 1952.

WOMEN'S AUXILIARY OF MERCY HOSPITAL

The Women's Auxiliary of Mercy Hospital celebrated its first anniversary in February, 1952, with a buffet luncheon in the Nurses' Home. In this year membership has increased to over 700.

The members are now busy with plans for a Fall Benefit to be held at the Alcazar on October 3, 1952, featuring a raffle on "A Week at the Waldorf".

DR. SIEGEL APPOINTED NEW OBSTETRICAL CHIEF
AT SINAI HOSPITAL

Dr. Isadore A. Siegel, Associate Professor of Obstetrics at the School of Medicine has been recently appointed Obstetrician-in-Chief at the Sinai Hospital in Baltimore, to succeed Dr. Alan Guttmacher who recently resigned to accept the newly created post of full-time Director of Obstetrics and Gynecology at the Mt. Sinai Hospital in New York.

Dr. Siegel, long active in the Department of Obstetrics, at the School of Medicine, has served on the Staff of the Sinai Hospital as Assistant and Visiting Gynecologist and Attending Obstetrician since 1926. A classmate of Dr. Guttmacher, Dr. Siegel took his A.B. degree from Johns Hopkins University in 1919 and his M.D. degree four years later at Johns Hopkins School of Medicine. He became a member of the Faculty of the University of Maryland School of Medicine in 1926.

DR. ALVAREZ TO GIVE ANNUAL FRIEDENWALD LECTURE

Will Lecture at School on October 9

As a fitting memorial to the late Doctor Julius Friedenwald, a lectureship was established at the School of Medicine of the University of Maryland. A Committee consisting of Dr. Maurice Feldman, Dr. Maurice Pincoffs, Dr. Walter Wise, Dr. Samuel Morrison and Dr. H. Boyd Wylie, Dean of the School of Medicine, ex-officio, was appointed by the University of Maryland to administer this yearly lectureship.

It was felt that the establishment of a yearly lectureship with the presentation of some gastrointestinal subject would be a lasting tribute to the late Dr. Julius Friedenwald. It was this specialty to which he devoted his life and to which he contributed so much. Dr. Friedenwald's ability as a doctor was recognized by all. He was a scientist, teacher, writer and a physician who not only loved but truly lived for his profession. He was an inspiration and guide to all who were fortunate enough to be associated with him. In addition to his professional attainments in Gastroenterology, Dr. Friedenwald endeared himself to the hearts of his colleagues and fellow citizens. In his memory, this yearly lecture is given at The University of Maryland, School of Medicine, where he served so faithfully as Professor of Gastroenterology.

The first lecture was given by Dr. George Eusterman of the Mayo Clinic, in 1946; the second in 1947 by Dr. Walter L. Palmer of the University of Chicago; the third in 1948 by Dr. Frank H. Lahey, of the Lahey Clinic of Boston; the fourth in 1949 by Dr. Henry L. Bockus, University of Pennsylvania Graduate School of Medicine; the fifth in 1950 by Dr. Andrew C. Ivy, of the University of Illinois, Chicago; the sixth in 1951 by Dr. Albert F. R. Andresen, State University Medical Center, College of Medicine, New York. The seventh lecture will be given by Dr. Walter C. Alvarez, October 9, 1952.

Dr. Alvarez, formerly of the Mayo Clinic, is now Professorial Lecturer at the University of Illinois.

Dr. Alvarez has been an intensive research worker. His early interest in intestinal physiology led him to establish the gradient theory of the gastrointestinal tract, with all its implications in terms of tonicity and peristalsis. He published a treatise on "Mechanics of the Digestive Tract." Later his work on "Nervous Indigestion and Pain," appeared and was widely read and along with his most recent book "The Neuroses" which has been favorably reviewed, marked his interest and approach to the large field of psychiatry in gastroenterology.

He is a past president of the American Gastroenterological Association and a recipient of the Julius Friedenwald Medal. The latter is given to a member of this Society who has distinguished himself as a Gastroenterologist of the highest standing.

Dr. Alvarez will speak on "Some Curious Digestive Syndromes and Their Causes."

DEPARTMENT OF DERMATOLOGY

Dr. Harry M. Robinson, Sr. is completing a research project on the treatment of Scleroderma. He will deliver a preliminary report at the Tenth International Congress of Dermatology in London, England in July, 1952.

Dr. Harry M. Robinson, Jr. and Dr. Eugene S. Bereston are conducting studies on the inhibition of the Tyrosine and Tyrosinase Reaction by various bacteria.

Dr. M. M. Cohen, in collaboration with other members of the department, is investigating the value of Atabrine in the treatment of Chronic Discoid Lupus Erythematosus.

Dr. Harry M. Robinson, Jr., in collaboration with Drs. Israel Zeligman, A. Shapiro, and M. M. Cohen will present an exhibit on "1013 Patients with Dermatoses Treated with Chloromycetin" in Chicago during the December, 1952 meeting of the American Academy of Dermatology. This group will also present a paper "The Value of Terramycin in Treatment of Dermatoses" at the meeting of the Southern Medical Association to be held at Miami, Florida during November, 1952.

DEPARTMENT OF PHARMACOLOGY

Mr. Leonard S. Brahen has received a United States Public Health Service Research Fellowship through the National Heart Institute for studies on cardiovascular disease.

Dr. Go Lu has been appointed a Fellow in Pharmacology for the year 1952-53, under a grant from the Ohio Chemical and Surgical Equipment Company. His work will be concerned with volatile anesthetics and the ATPase activity of the brain.

DEPARTMENT OF PEDIATRICS

Dr. Kenneth F. Clute has been recently appointed Research Associate in Pediatrics and Medicine, this appointment was effective as of July 1, 1952. In the Department of Pediatrics Dr. Clute will devote his work principally to a project supported by the M & R Laboratories and will investigate the problem of regurgitation among infants.

He is a graduate of the University of Toronto of the class of 1945. He served his

rotating internship at the Toronto General Hospital and was Resident in Pathology at the Regina General Hospital and the Grey Nuns' Hospital in Regina, Saskatchewan from 1947-48. He was a Senior Intern at the Children's Hospital in Montreal and was Assistant Resident in Pediatrics at the same hospital during 1949-1950. In 1950 he came to the Johns Hopkins Hospital where he served as Assistant Psychiatrist on the Children's Psychiatric Service, holding a Fellowship in Pediatrics.

Beginning July 1, 1952 the Mental Hygiene Society will support a Community Child Guidance Clinic in the Department of Pediatrics at the University Hospital. The control of this clinic will be handled jointly by the Departments of Psychiatry and Pediatrics. For the continued operation of the Clinic the Mental Hygiene Society will appropriate a sum of \$25,000 per year.

NEW APPOINTMENTS TO STAFF OF THE SCHOOL OF MEDICINE

Maurice H. Greenhill, A.B., M.D., Associate Professor of Psychiatry. Effective Feb. 1, 1952.

George F. Sutherland, M.D., Associate Professor of Psychiatry. Effective May 1, 1952.

Annie M. Bestebreurtje, B.S., M.D. Assistant Professor in Pediatrics. Effective Oct. 1, 1951 through September 30, 1952.

Joseph M. Young, M.D., Assistant Professor of Pathology.

Kenneth F. Clute, A.B., M.D., Research Associate in Pediatrics & Medicine. Effective Feb. 1, 1952.

Nancy B. Reid, Ph.D., Research Associate in Psychiatry. Effective November 1, 1951 through April 30, 1952.

William C. Ebeling, III, M.D., Associate in Medicine. Effective July 1, 1952 through June 30, 1953.

Richard Lindenberg, M.D., Associate in Legal Medicine. Effective September 25, 1951.

Sidney Scherlis, A.B., M.D., Associate in Pediatrics and Director of the Pediatric Cardiac Clinic. Effective December 1, 1951.

David Bacharach, A.B., M.D., Instructor in Dermatology and Syphilology. Effective Oct. 22, 1952.

Charles P. Barnett, A.B., M.D., Instructor in Pathology. Effective February through May 1952.

Klaus W. Berblinger, M.D., Instructor in Psychiatry. Effective April 1, 1952 through June 30, 1952.

Raymond M. Cunningham, A.B., M.D., Instructor in Pathology.

James R. Karns, B.S., M.D., Instructor in Pathology.

Stanley Miller, A.B., M.D., Instructor in Medicine. Effective October 23, 1951.

Robert C. Rodger, M.D., Instructor in Pathology. Effective September 1, 1951.

Leonard Scherlis, B.S., M.D., Instructor in Pediatrics. Effective December 1, 1951.

Nathan Snyder, M.D., Instructor in Anatomy.

Jose A. Alvarez, B.S., M.D., Assistant in Surgery. Effective February 1, 1952.

Nancy M. Balchun, Assistant in Art as Applied to Medicine. Effective February 1, 1952.

- Joseph C. Blazek, A.B., M.D., Assistant in Medicine. Effective October 1, 1951.
- Bernard Burgin, A.B., M.D., Assistant in Medicine. Effective October 23, 1951 through June 30, 1952.
- Garrett E. Deane, M.D., Assistant in Department of Pediatrics. Effective January 1, 1952.
- Karl A. Dillinger, M.D., Assistant in Surgery. Effective January 1, 1952.
- Vincent dePaul Fitzpatrick, Jr., A.B., M.D., Assistant in Obstetrics. Effective Sept. 1, 1951.
- Joseph B. Ganey, A.B., M.D., Assistant in Surgery. Effective January 1, 1952.
- Charles Richard Gilbert, M.D., Assistant in Gynecology. Effective January 1, 1952.
- Angelina Guido, A.B., M.D., Assistant in Ophthalmology. Effective January 1, 1952.
- Frederick T. Heldrich, Jr., A.B., M.D., Assistant in Pediatrics. Effective January 1, 1952.
- John A. Hightower, M.D., Assistant in Medicine. Effective January 1, 1952.
- Herbert Joseph Levickas, B.S., M.D., Assistant in Medicine. Effective October 1, 1951.
- Fern E. MacAllister, B.S., M.D., Assistant in Psychiatry. Effective Nov. 1, 1951 through June 30, 1952.
- Joseph Charles Matchar, A.B., M.D., Assistant in Medicine. Effective October 1, 1951 through June 30, 1952.
- Thomas D. Michael, B.S., M.D., Assistant in Surgery. Effective January 1, 1952.
- Sumner Malone Parham, A.B., M.D., Assistant in Obstetrics. Effective January 1, 1952.
- Robert S. Penton, A.B., M.D., Assistant in Surgery. Effective January 1, 1952.
- Ernest Scher, M.D., Assistant in Obstetrics. Effective September 15, 1951.
- Mary Frances Byrd, A.B., Fellow in Pharmacology. Effective September 1, 1951 through Aug. 31, 1952.
- William G. Esmond, M.D., Fellow in Medicine. Effective July 1, 1952 through June 30, 1953.
- Alvin Nathan Geser, B.S., Bressler Reserved Fund Fellow in Biological Chemistry. Effective November 1, 1951 through June 30, 1952.
- August Kiel, Jr., M.D., Hitchcock Fellow in Neurosurgery. Effective January 1, 1952 through June 30, 1952.
- Armando Ortiz, M.D., Fellow in Neurosurgery. Effective January 1, 1952 through June 30, 1952.
- Alfred Joseph Pratt, B.S., John F. B. Weaver Fellow in Physiology. Effective October 1, 1951 through September 30, 1952.
- Elizabeth A. Winarz, M.D., Fellow in Psychiatry. Effective September 15, 1951.
- Elizabeth Anne Adams, Research Assistant in Psychiatry. Effective December 1, 1951 through June 30, 1952.
- Delma Phelps Decsi, A.B., Research Assistant in Biological Chemistry. Effective October 15, 1951 through August 31, 1952.
- Jose Cecilio Echiandia, Research Assistant in Medicine. Effective January 7, 1952.

Arthur J. Fisk, B.S., Research Assistant in Legal Medicine. Effective September 1, 1951 through August 31, 1952.

Ella W. Freytag, Research Assistant in Legal Medicine. Effective June 1, 1952 through May 31, 1953.

Awilda Gay, B.S., Research Assistant in Medicine. Effective September 10, 1951.

Norma Mary Keigler, B.S., Research Assistant in Bacteriology. Effective October 1, 1951 through June 30, 1952.

Dorothy M. Peterson, Research Assistant in Medicine. Effective February 11, 1952.

Edwin L. Poole, B.S., Research Assistant in Psychiatry. Effective February 15, 1952.

Patricia S. Thorpe, A.B., Research Assistant in Biochemistry. Effective April 15, 1952 through August 31, 1952.

Floris de Balbian Verster, B.S., M.S., Research Assistant in Psychiatry. Effective December 15, 1951 through June 30, 1952.

ASSOCIATE PROFESSORSHIPS BY PROMOTION:

Francis A. Ellis, A.B., M.D., From Assistant Professor in Dermatology to Associate Professor of Dermatology.

Harry M. Robinson, Jr., B.S., M.D., From Assistant Professor in Dermatology to Associate Professor of Dermatology.

ASSISTANT PROFESSORSHIPS BY PROMOTION ARE AS FOLLOWS:

Eugene S. Bereston, A.B., M.D., From Associate in Dermatology to Assistant Professor of Dermatology.

Stanley H. Durlacher, M.D., From Associate in Legal Medicine to Assistant Professor in Legal Medicine.

James R. Karns, B.S., M.D., From Associate in Medicine to Assistant Professor of Medicine.

Raymond C. Vail Robinson, M.D., From Associate in Dermatology to Assistant Professor of Dermatology.

Sidney Scherlis, M.D., From Associate in Medicine to Assistant Professor in Medicine.

Albert Shapiro, B.S., M.D., From Associate in Dermatology to Assistant Professor of Dermatology.

Harry A. Teitlebaum, B.S., M.D., From Associate in Medicine to Assistant Professor of Medicine.

Israel Zeligman, A.B., M.D., From Associate in Dermatology to Assistant Professor of Dermatology.

ASSOCIATES BY PROMOTION:

Louis V. Blum, M.D., From Assistant Pediatrician to Associate in Medicine.

Charles E. Brambel, A.M., M.D., From Instructor in Medicine to Associate in Medicine.

John B. DeHoff, M.D., From Instructor in Medicine to Associate in Medicine.

John M. Dennis, B.S., M.D., From Instructor in Roentgenology to Associate in Radiology.

William V. Lovitt, Jr., M.D., From Instructor in Legal Medicine to Associate in Legal Medicine.

J. Emmett Queen, M.D., From Instructor in Medicine to Associate in Medicine.
Melchijah Spragins, B.S., M.D., From Instructor in Pediatrics to Associate in Pediatrics.

ASSOCIATES BY PROMOTION AWARDED AS FOLLOWS:

Betty Jane Fax, Ph.D., From Research Assistant to Associate in Psychiatry.
Effective January 1, 1952.

INSTRUCTORS BY PROMOTION ARE AWARDED AS FOLLOWS:

Ruth W. Baldwin, M.D., From Assistant in Pediatrics to Instructor in Pediatrics and Director of the Pediatrics Seizure Clinic.

Melvin N. Borden, M.D., From Assistant in Pediatrics to Instructor in Pediatrics.

Lester Harold Caplan, M.D., From Assistant in Pediatrics to Instructor in Pediatrics.

William F. Cox, III, M.D., From Assistant in Medicine to Instructor in Medicine.

Edward Graham Field, M.D., From Assistant in Pediatrics to Instructor in Pediatrics.

Richard M. Garret, M.D., From Assistant in Surgical Anatomy to Instructor in Surgical Anatomy.

Howard Goodman, M.D., From Assistant in Pediatrics to Instructor in Pediatrics.

Donald Willis Mintzner, M.D., From Assistant in Medicine to Instructor in Medicine.

James H. Ramsey, M.D., From Assistant in Pathology to Instructor in Pathology.

William N. Fitzpatrick, B.S., M.D., From Assistant in Psychiatry to Instructor in Psychiatry. Effective January 1, 1952.

FORMATION OF INTERNATIONAL FERTILITY ASSOCIATION

On October 18, 1951, in Rio de Janeiro, Brazil, delegates from twelve nations founded a new world medical society known as the International Fertility Association. The aims of this organization are:

- 1) To study the problems of Fertility and Sterility in their broad implications.
- 2) To stimulate scientific investigation and social awareness in the field of Fertility and Sterility.
- 3) To standardize and orient nomenclature, terminology, tests and evaluation of diagnostic methods and therapy, throughout the world.
- 4) To hold international congresses in the specialty in different parts of the world.
These congresses are to be regularly scheduled.

The First World Congress on Fertility and Sterility sponsored by the new society will be held in conjunction with the American Society for the Study of Sterility in New York City in May, 1953.

For further information, write to Dr. Carlos D. Guerrero, Secretary-General, Miguel E. Schulz No. 19, Mexico, D. F., or to Dr. Abner I. Weisman, Associate Secretary-General, 1160 Fifth Avenue, New York, N. Y.

STUDIES FROM
THE SCHOOL OF MEDICINE

UNIVERSITY OF MARYLAND
FOR
1950-1951



Baltimore 1, Maryland



STUDIES FROM THE SCHOOL OF MEDICINE

1. ABESHOUSE, B. E., GOLDSTEIN, A. E. AND TANKIN, L. H.
The ectopic ureteral orifice: A report of 4 cases. *Urologic and Cutaneous Rev.* **54**: 7, 1950.
2. ABRAMS, R. D. Joint author. See item 261.
3. ALVAREZ-DE CHAUDENS, JOSÉ A. Joint author. See item 256.
4. ARNOLD, J. G., JR.
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5. ARNOLD, J. G., JR. Joint author. See item 210.
6. BAGGETT, JOSEPH. Joint author. See item 71.
7. BAKER, J. TYLER AND SAVAGE, JOHN E.
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8. BAKER, J. TYLER.
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9. BARNES, THOMAS G. Joint author. See items 127, 311, 312, 313.
10. BARNETT, D. J. Joint author. See items 49, 50, 52.
11. BARRABEE, E. L. Joint author. See item 194.
12. BASORA Y DEFILLO, J. Joint author. See item 185.
13. BAUER, R., BENSON, J. R., PARKER, R. T., HALL, H. E., HIGHTOWER, J. A., SYNDER, M. J., JOSLIN, B. S. AND WOODWARD, T. E.
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14. BAUER, R. E. Joint author. See items 218, 219, 305.
15. BEARDSLEY, JANE. Joint author. See item 256.
16. BELL, FREDERICK K. AND KRANTZ, JOHN C., JR.
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18. BELL, FREDERICK K. Joint author. See item 60.
19. BENSON, J. R. Joint author. See items 13, 226.
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22. BERESTON, EUGENE S. AND ROBINSON, HARRY M., JR.
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23. BIRD, JOSEPH G. Joint author. See item 131.
24. BLAIR, E. AND BRANTIGAN, O. C.
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25. BLUM, LOUIS V. AND WOODWARD, T. E.
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27. BOWEN, J. J. Joint author. See item 257.
28. BRADFORD, G. Joint author. See item 247.
29. BRADLEY, J. E. AND HOWARD, A.
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30. BRADLEY, J. EDMUND, DRAKE, MILES E. AND MACK, H. PATTERSON.
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32. BRADLEY, J. E. Joint author. See items 72, 227.
33. BRADY, LEO AND WAYBURN, GATES.
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37. BRANTIGAN, O. C. AND RIGDON, H. L.
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41. BRANTIGAN, O. C. AND NETTERVILLE, R. C.
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44. BROCKMAN, H. LEROY AND KRAHL, VERNON E.
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46. BROSS, I. Joint author. See item 246.
47. BROWN, F. C. Joint author. See item 271.
48. BRUMBACK, FRANK M. Joint author. See item 176.
49. BRUNST, V. V., BARNETT, D. J. AND FIGGE, FRANK H. J.
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50. BRUNST, V. V., SHEREMETIEVA-BRUNST, E. A., BARNETT, D. J. AND FIGGE, FRANK H. J.
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55. BUNDICK, WILLIAM R. AND ELLIS, FRANCIS A.
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56. BURGISON, RAYMOND M. Joint author. See items 59, 60.
57. BYERLY, WILLIAM L., JR. Joint author. See item 311.
58. BYRNE, R. J. Joint author. See item 116.
59. CARR, C. JELLEFF, BURGISON, RAYMOND M., FASSEL, MARY S. AND KRANTZ, JOHN C., JR.
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60. CARR, C. JELLEFF, BURGISON, RAYMOND M., BELL, FREDERICK K. AND KRANTZ, JOHN C., JR.
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61. CARR, C. JELLEFF. Joint author. See items 131, 152, 153, 154, 155, 157, 158.
62. CHRISTHILF, STUART M., JR. Joint author. See item 174.
63. COBB, S. Joint author. See item 261.
64. COHEN, MORRIS M. Joint author. See item 240.
65. CRILLY, JAMES A. Joint author. See item 103.
66. CULVER, PERRY J. Joint author. See item 154.

67. DEANE, G. E. Joint author. See item 184.
68. DECKER, HENRY C., MCDOWELL, FLETCHER W. AND TRIMBLE, I. RIDGEWAY.
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69. DIAZ-RIVERA, R. Joint author. See item 309.
70. DIEHL, W. K. AND LEVINSON, LORMAN L.
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74. EDWARDS, MONTE AND REIMANN, D. L.
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79. FASSEL, MARY S. Joint author. See items 59, 156.
80. FELDMAN, M.
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103. FISHER, WILLIAM H., JR., CRILLY, JAMES A. AND MAYS, HOWARD B.
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106. FREIMUTH, HENRY C., VOLATILE, MICHAEL T. AND FISHER, RUSSELL S.
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110. GINSBERG, MILTON. Joint author. See items 195, 196, 198, 199, 200, 201, 203, 259.
111. GOLDSTEIN, A. E.
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118. HARMON, JOHN B. Joint author. See item 131.
119. HART, A. D. Joint author. See item 301.
120. HAWKINS, CHARLES W. Joint author. See item 287.
121. HELMHOLD, R. Joint author. See item 185.
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123. HIGHTOWER, J. A. Joint author. See items 13, 116, 309.
124. HOLBROOK, WILLIAM A., JR. Joint author. See item 311.
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126. HUBBARD, DOROTHY E. AND SCHMIDT, EMIL G.
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129. IMBURG, J. Joint author. See items 72, 185.
130. IVY, A. C. Joint author. See item 108.
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135. JONES, CHESTER M. Joint author. See item 154.
136. JONES, EVERETT D.
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145. KLINGMAN, W. O. Joint author. See item 301.
146. KNAPP, M. JOYCE. Joint author. See item 158.
147. KRAHL, VERNON E.
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POST GRADUATE COMMITTEE SECTION

POST GRADUATE COMMITTEE, SCHOOL OF MEDICINE

HOWARD M. BUBERT, M.D., *Chairman and Director*

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TELEVISION PROGRAM

In the fall of 1951, Dr. John C. Krantz of the University of Maryland School of Medicine was approached by Anne Holland of the WBAL Broadcasting and Television Studios as to the possibility of the University of Maryland presenting a series of sound, scientific television programs upon the subject of health that would be designed to carry both an understandable and an authoritative message to the lay public. Dr. Krantz, with his usual foresight, recognized the possibilities and, with no financial help and with no professional assistance, enlisted the aid of certain members of the faculties of the Medical, Dental, Pharmacy, Nursing, and Law Schools and the administrative staff of the University Hospital—and “the show went on.” Since then, a program entitled “Live and Help Live” has been presented every Tuesday evening. The success of this has been, by all standards used in measuring such matters, phenomenal.

Because of the rapid increase in public acceptance, it became apparent that a more formal administrative control must be established; consequently, upon advice from the Faculty Advisory Board, the Dean of the Medical School appointed a Television Committee to consider all aspects of the matter. This Committee recommended that this activity be placed under the Postgraduate Committee of the Medical School insofar as that School was concerned, and this was done by the Dean and the Faculty Advisory Board on April 17, 1952.

Because the “stars” of this series are members of the faculties of our professional schools, a more detailed and authoritative story of its development seems worth telling. We hope to present this in a future issue.

An enterprise of this magnitude presents many problems, but we are convinced that its successful pursuit is so vital that everyone will subordinate all personal or selfish interests for the good of the University. We believe that the future is bright for this television venture.

BASIC SCIENCES AS THEY APPLY TO THE PRACTICE OF MEDICINE

The Post Graduate Committee of the University of Maryland School of Medicine announces that it will again offer a course in the *Basic Sciences as They Apply to the Practice of Medicine*, beginning September 24, 1952. Dr. John C. Krantz, Jr., Professor of Pharmacology at the University of Maryland will give the first lecture,

entitled "Mechanism of the Action of Drugs." The course, first offered in 1951 was in response to numerous requests for an undertaking of this nature. The widespread interest and enrollment indicated that the need was a real one in the Baltimore area.

In the light of the experience gained at this time and on the basis of a questionnaire sent to all registrants after they had finished the course, certain changes in content are contemplated for the coming year. Chief among these is an increase in the emphasis placed upon clinical application of the basic principles discussed. However, the Committee wants to make it clear that the course will concern itself primarily with the fundamental biological concepts on which the modern practice of medicine is based and in no sense of the word is it intended to give practitioners specific instructions as to how to proceed in definite clinical situations. Such instruction is available at the numerous clinical conferences, seminars and symposia sponsored by local hospitals and medical societies.

On the other hand, the rapidly expanding knowledge on all scientific fronts makes it difficult for the busy practitioner to appreciate and understand the new ideas which germinate in the basic sciences. It is to fill this gap that this course is offered. Particular stress will be laid on the changes which have occurred during the past ten years. The areas covered will include biochemistry, embryology, histology, immunology, neuroanatomy, neurophysiology, pharmacology and physiology. Gross anatomy and pathology are not included since courses covering these special fields are available in this school. The tentative lecture schedule includes discussion of such subjects as the physiology of hypertension, its pharmacological and surgical control, natural and immune mechanisms of host resistance, practical aspects of neurophysiology, the pharmacology of antihistaminics and antibiotics, and many others.

Thirty-two 2-hour meetings will be held on Wednesdays at 4:00 p.m., in the Bressler Lecture Hall, 2nd Floor, 29 South Greene Street, except during University holidays. Each meeting will consist of a lecture on the topic of the day followed by a period devoted either to a discussion of clinical applications with time for questions and comments from the floor, or the showing of a recent motion picture pertinent to the subject.

The course is designed primarily for physicians in training in the Baltimore area and it is expected that the greater part of the enrollment will come from this group. However, any qualified and interested physician is welcome and in the past a number of local practitioners have taken advantage of this opportunity, the course being open to the graduates of any approved medical school on application to the Committee.

Tuition is **\$50.00** and registration is urged in advance. This may be done on the payment of a **\$10.00** deposit fee, this deposit to be applied to tuition when registration is completed, but not returnable, in the event the course is not taken. Arrangements are in charge of a subcommittee consisting of Dr. Dietrich C. Smith, Chairman; Dr. Otto C. Brantigan and Dr. Frank H. J. Figge. A detailed prospectus of the course, further information, or application blanks are available from the Office of the Post Graduate Committee, 6th Floor Bressler Building, 29 S. Greene Street, Baltimore 1, Maryland. Registration will be held on September 22 and 23, 1952 from 9:00 a.m. to 4:00 p.m. at this address.

TENTATIVE LECTURE SCHEDULE

1952-1953

Faculty

Otto C. Brantigan, M.D., Professor of Surgical Anatomy, Clinical and Thoracic Surgery
 C. Jelleff Carr, Ph.D., Professor of Pharmacology
 Frank H. J. Figge, Ph.D., Professor of Anatomy
 John C. Krantz, Jr., Ph.D., Professor of Pharmacology
 Robert H. Oster, Ph.D., Professor of Physiology (Dental School)
 Dietrich C. Smith, Ph.D., Professor of Physiology
 James G. Arnold, M.D., Associate Professor of Neurological Surgery
 Frederick P. Ferguson, Ph.D., Associate Professor of Physiology
 William S. Love, M.D., Associate Professor of Medicine
 Milton S. Sacks, M.D., Associate Professor of Medicine
 Theodore E. Woodward, M.D., Associate Professor of Medicine
 John DeCarlo, Jr., M.D., Assistant Professor of Roentgenology
 Raymond M. Burgison, Ph.D., Assistant Professor of Pharmacology
 Marie A. Andersch, Ph.D., Assistant Professor of Biological Chemistry in Medicine
 Merrill J. Snyder, B.S., Instructor in Bacteriology

Tentative Schedule

Meetings will be held on Wednesdays from 4 until 6 p.m. in the lecture hall second floor Bressler Building, 29 S. Greene Street, unless otherwise announced.

1952

Sept. 24	Mechanism of the Action of Drugs	Dr. Krantz
Oct. 1	Physiology of the Heart	Dr. Smith
	Angiocardiography	Dr. DeCarlo
Oct. 8	Physiology of Congestive Heart Failure. Motion Picture: THE HEART (Searle)	Dr. Smith
Oct. 15	The Use of Drugs in Congestive Heart Failure	Dr. Krantz
Oct. 22	The Physiology of Forward Failure of the Circulation. Motion Picture: CARDIAC CYCLE (Searle). Motion Picture: CARDIAC ARRHYTHMIAS (Abbott)	Dr. Smith
Oct. 29	The Physiology of Hypertension	Dr. Smith
	Surgical Treatment of Hypertension	Dr. Brantigan
Nov. 5	Pharmacology of Hypertension	Dr. Burgison
Nov. 12	Pharmacology of Peripheral Vascular Disease	Dr. Burgison
Nov. 19	Physiology of Respiration	Dr. Oster
	Clinical Aspects	Dr. Brantigan
Dec. 3	Blood Group Immunology	Dr. Sacks
Dec. 10	Electrocardiography	Dr. Ferguson
	Clinical Consideration	Dr. Love
Dec. 17	Factors Controlling Acid-Base Balance	Dr. Andersch

1953

Jan. 7	Physiology of the Kidney. Motion Picture: KIDNEY IN HEALTH (Lilly)	Dr. Ferguson
Jan. 14	Electrolyte and Water Balance. Motion Picture: KIDNEY IN DISEASE (Lilly)	Dr. Ferguson
Jan. 21	Electrolyte and Water Balance	Dr. Ferguson
	Clinical Aspects	Dr. Sacks
Jan. 28	Physiology of the Adrenal Cortex. Motion Picture: ACTH (Armour)	Dr. Smith

Feb. 4	Physiology of the Adrenal Cortex, continued	Dr. Smith
	Clinical Application of Adrenal Steroids and ACTH	Dr. Sacks
Feb. 11	Physiology of the Sex Hormones. Motion Picture: MALE SEX HORMONE (Schering)	Dr. Smith
Feb. 18	Physiology of Menstruation. Motion Picture: PHYSIOLOGY OF MENSTRUATION (Schering)	Dr. Smith
Feb. 25	Dr. Figge
Mar. 4	Microanatomy. Subjects to be announced later	Dr. Figge
Mar. 11	Dr. Figge
Mar. 18	Dr. Figge
Mar. 25	Vitamines, Anti-Vitamines and Hematopoiesis	Dr. Sacks
Apr. 1	Natural Mechanisms of Host Resistance	Mr. Snyder
Apr. 8	Specific Immune Mechanisms of Host Resistance	Mr. Snyder
Apr. 15	Immune Factors in Clinical Disease	Dr. Woodward
Apr. 29	Practical Aspects of Neurophysiology	Dr. Arnold & Staff
May 6	Practical Aspects of Neurophysiology	Dr. Arnold & Staff
May 13	Practical Aspects of Neurophysiology	Dr. Arnold & Staff
May 20	Pharmacology of Antibiotics	Dr. Carr
May 27	Pharmacology of Antihistaminics	Dr. Carr

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The names listed above are officers for the term beginning July 1, 1952 and ending June 30, 1953.

PRESIDENT'S LETTER

Little has been written about the importance of a working relationship between the medical school and the "teaching" hospital. All sorts of cooperative agreements exist between schools and hospitals and some operate with the best results while others apparently have a fruitless effect on both parties.



Photo: Fabian Bachrach

Dr. D. J. Pessagno

In a sense every hospital should teach. The hospital instructs its nurses, its doctors and its patients. However the "teaching" hospital implies a great deal more than that. It is a medical institution associated and working closely together with a medical school. Its teaching program is a formal one for instructing undergraduates, interns, residents and young practicing physicians. In the field of medical education it has assumed a role of great significance and it has become vastly important in maintaining and improving the general health of the nation. Along with fulfilling its duties in a medical school faculty, the staff of such a hospital has become a faculty of its own.

There are few legal contracts between most

hospitals and medical schools but no legal contract can remove the need for mutual trust and forbearance. There is a definite necessity to bring the hospital and the school together in a better working relationship. The school must turn to the hospital for opportunities for student participation in clinical study and in turn must provide a responsible teaching staff.

The teaching staff member has a grave responsibility for the individual he is training and it is to him to see that the trainee gains as much experience as he can. There must be cooperative effort by all who have the privilege of belonging to the staff of such a hospital. The faculty member can be brought into a closer and more effective relationship with his school through his activities at the hospital.

As educational fashions have changed these many years, there have been constant modifications in teaching methods in clinical medicine. A shift from the didactic lecture of the professor to the patient as the ultimate teacher has taken place and with this change in teaching methods, there arose the need for more and more patients for clinical study purposes. The charity wards of the teaching hospital always supplied the faculty with the necessary cases. However, these charity cases upon which the hospitals and schools depend for teaching purposes are becoming fewer and fewer.

The rising standard of living among the lower income groups has been a major economic influence on this phase of medical education for many of what would have been medically indigent families in the charity class have become private or semi-private patients. Probably the Blue Cross insurance group has had the greatest influence in bringing this about. Few families today are without some form of medical insurance.

In many of the teaching hospitals more private patients are being utilized for clinical study. This in itself brings the student closer to the problems he will face in private practice. The patient himself should be reminded of the benefits he derives from the discussions and expert opinions that are voiced in a teaching clinic.

To improve the quality of medical care and to increase the number of skilled physicians—this is the true objective of the medical university. This aim can be realized only when the school and the hospital work together in close harmony and cooperation.

D. J. PESSAGNO, M.D., PRESIDENT

ITEMS

Dr. Charles P. Barnett, class of 1941, formerly of the Department of Pathology and who recently served a year as Fellow in the Department of Clinical Pathology, has joined the staff of the Department of Pathology at the Hahnemann Medical College in Philadelphia.

Dr. Morton H. Lipsitz, class of 1938, is now in practice at 860 West Ferry Street, Buffalo 9, New York.

Dr. R. A. Ireland, class of 1912, of Charleston, West Virginia, recently published a paper entitled "Neuronitis Simulating Acute Anterior Poliomyelitis." This was published in the West Virginia Medical Journal (**48**: 4—April, 1952).

Dr. Bricey M. Rhodes. Tallahassee, Florida, class of 1922, was recently elected President of the Florida State Board of Medical Examiners.

Dr. Herbert Berger, class of 1932, of Tottenville, Staten Island, New York, was recently elected President of the Richmond County Medical Society.

Dr. E. P. Smith, Jr., class of 1946, has been appointed a Fellow in Surgery at the Lahey Clinic in Boston, Massachusetts beginning July 1, 1952. Dr. Smith will reside at 20 Fernald Drive, Cambridge 38, Massachusetts.

Dr. Helen A. Horn, class of 1944, who was recently a member of the staff of the National Cancer Institute in Bethesda, Maryland, has been appointed Pathologist at the High Point Memorial Hospital, High Point, North Carolina.

CORRESPONDENCE

June 27, 1952

Dr. Simon Brager, Secretary
Medical Alumni Association
University of Maryland
Baltimore, Maryland

Dear Dr. Brager:

I would like to congratulate you on the success of alumni day. It was a pleasure to be present at the various activities and I was pleased to be there to receive the handsome certificate awarded by the Alumni Association.

Could you kindly let me have the name and address of the photographer who took the pictures at the banquet?

Sincerely yours,

J. Symington, M.D.
Carthage, N. C.

OBITUARIES

- Berryhill, William Griffith**, Orangeville, Pa.; B.M.C., class of 1895; aged 85; served during World War I; died, February 25, 1952, of carcinoma of the throat and esophagus.
- Calitri, Constant**, Lawrence, Mass.; B.M.C., class of 1907; aged 64; died, January 16, 1952, of coronary occlusion.
- Hagmeier, Otto Charles**, Seaside, Ore.; P & S, class of 1906; aged 73; served during World War I; died, January 11, 1952, of carcinoma.
- Kafer, Oscar A.**, New Bern, N. C.; class of 1934; aged 43; died, December 29, 1951, of angina pectoris and myocarditis.
- Potts, Robert M.**, Fort Mill, S. C.; class of 1896; aged 80; died, February 9, 1952, of embolism and phlebitis of the right leg.
- Schaefer, Theodore A.**, Baltimore, Md.; class of 1907; aged 78; died, January 9, 1952, of diabetes mellitus and cerebral thrombosis.
- Sheahan, William Lawrence**, New Haven, Conn.; P & S, class of 1912; aged 64; died, December 16, 1951.
- Stone, Otis B.**, Libertytown, Md.; class of 1893; aged 81; died, January 5, 1952.
- West, Thomas Marshall**, Havertown, Pa.; class of 1908; aged 75; died, February 18, 1952, of uremia and nephrosclerosis.
- Morgenstern, James A.**, Easton, Pa.; P & S, class of 1907; aged 70; died, September 5, 1951, of chronic myocarditis.
- Owens, Maurice E. B. Sr.**, Cumberland, Md.; class of 1910; died, December 6, 1951, in Richmond, Va.
- Raynes, Myrton B.**, Melrose, Mass.; P & S, class of 1896; aged 84; died, November 7, 1951.
- Stevenson, Walter Davis**, Quincy, Ill.; B.M.C., class of 1906; aged 67; served during World War I; died, October 26, 1951, of cerebral hemorrhage.
- Sudler, Wright S.**, Baltimore, Md.; class of 1903; aged 72; died, November 19, 1951.
- Troxell, George Allen**, Sarasota, Fla.; B.M.C., class of 1900; aged 78; died, December 14, 1951, of arteriosclerosis and uremia.
- Welton, William Archibald**, Fairmont, W. Va.; class of 1923; aged 53; died, December 19, 1951, following an operation for brain tumor.
- Whelpley, George Frederick**, Boston, Mass.; class of 1903; aged 78; died, October 26, 1951, of cerebral thrombosis.
- Whichard, Murray Parmer**, Edenton, N. C.; class of 1910; aged 63; died, August 28, 1951, of arteriosclerotic heart disease.
- Williams, Edward Charles**, Port Trevorton, Pa.; P & S, class of 1903; aged 70; died, November 30, 1951, of diabetes mellitus.
- Witt, Lazarus L.**, Indianapolis, Ind.; B.M.C., class of 1893; aged 87; died, November 13, 1951, of heart disease.

Dr. Thomas H. Worrell

Dr. Thomas H. Worrell, B. M. C., class of 1912, died at his home at Mt. Airy, North Carolina on February 23, 1952. Dr. Worrell who was 67 had practiced in this

local community for more than 25 years. Recently he had retired from active practice.

The son of the late Major C. C. Worrell, he was raised in Carroll County, North Carolina and after graduation from the Baltimore Medical College served as a rotating intern at the Maryland General Hospital. He then entered practice at Hillsville, Virginia and later at Mt. Airy, North Carolina.

Dr. Frederick Lahmers

Dr. Frederick Lahmers, class of 1898, Baltimore Medical College, died at the City Hospital, Akron, Ohio on March 29, 1952, aged 79. Dr. Lahmers had been in poor health for nearly four years, suffering a series of heart attacks due to the infirmities of age and advancing arteriosclerosis.

A practitioner for over 53 years, he was active principally in obstetrics and in pediatrics, serving the community of Barberton, Ohio for 39 years and practicing in Akron the last 14 years prior to his death.

Dr. Thomas Joseph Roche

Dr. Thomas Joseph Roche, class of 1911, College of Physicians and Surgeons, Bridgeport (Connecticut), obstetrician, died at his home on April 30, 1952.

Dr. Roche was born in Westerly, Rhode Island, the son of the late David and Catherine Kirby Roche. After attending the public schools he graduated as a pharmacist from the Rhode Island College of Pharmacy and subsequently graduated from the University of Maryland College of Physicians and Surgeons in 1911. He then returned to Connecticut becoming closely associated with the Bridgeport Hospital, serving his internship from 1911 to 1912. He later was appointed Assistant in Gynecology and Obstetrics. In 1921 he became Attending Obstetrician and in 1939 was named Chief of the Obstetrical Service until his retirement in 1947.

He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. He was a member of the American College of Surgeons, International Academy of Medicine, Knife and Fork Club, Algonquin Club and was a member for fifty years of the Knights of Columbus.

Dr. George L. Hilton

Dr. George L. Hilton, class of 1902, died in a local hospital at Nashua, New Hampshire on October 8, 1951.

Dr. Hilton was born on June 27, 1876 at Palmyra, Maine. He was graduated from the University of Maine in the class of 1899 and received his degree of doctor of medicine from the college of Physicians and Surgeons in Baltimore, Maryland in 1902. He returned to Bangor, Maine where he served as city physician and was a member of the Bangor Police Commission. He practiced then in Milford more than 40 years. He was more recently a resident physician at the Aldworth Manor in Harrisville. He was a member of the New Hampshire Medical Association and the American Medical Association.

Bulletin OF THE SCHOOL OF MEDICINE UNIVERSITY OF MARYLAND

VOLUME 37

October, 1952

NUMBER 4

EDITORIAL

A SOUND ANTIBIOTIC APPROACH

During the past several decades the treatment of microbial diseases has undergone radical changes. In former years curative measures consisted of the administration of anti-sera which provided antibodies and other substances as ancillary aids to the host. As in the past, the transfusion of whole blood continues to share a place in combating infection. Since the advent of the sulfonamides in 1936 and of the antibiotics in 1940, the principal effort has been directly anti-microbial and by this method, the invading organism is held at bay, allowing the body defenses to assume an upper hand. In this respect, the human host has responded effectively although it now becomes necessary to point out that certain fundamental problems require review.

Antibiotics, when administered during the very early stages of certain diseases, may interfere with normal defenses by retarding the ultimate quantitative production of antibody. This has been demonstrated particularly in rickettsial infections when relapses have been encountered in patients who have received therapy during the first several days of illness. Likewise relapses have been observed when patients with tularemia received antibiotic therapy in the early stages of their diseases. This tendency to recrudescence in the aforementioned diseases has prompted the employment of interrupted or discontinuous treatment in certain bacterial infections including typhoid fever in an effort to prevent anticipated relapses rather than to rely upon the continual daily administration of an antibiotic for too long a period of time. Unfortunately, in many diseases there is no sufficiently accurate laboratory test capable of appraising the immune state, a fact which emphasizes the need for rational antibiotic therapy.

Contrariwise the reduction of antibody formation may be of practical importance in the prevention of disease. One of the present concepts of the prevention of rheumatic fever is based on the inhibition of the hypersensitive state which is measured by an indicator reaction such as the antistreptolysin titer. This may be accomplished by administration of penicillin or other antibiotics shortly after the incipency of hemolytic streptococcal infections of the upper respiratory tract.

The presence of microbial toxins, which often exert very deleterious effects upon

the infected host, constitute additional evidence favoring early treatment of disease processes in man. Prompt specific treatment diminishes the number of microbes and lessens the available toxin capable of injuring the host. Rickettsial toxin and its effect upon the nervous and circulatory system, brucella toxin and its damaging effect principally upon the peripheral nerves and plague toxin with its profound effect upon the circulatory system are examples. How is one to cope with toxin? Will hormones be of value, especially in certain instances when antitoxin is ineffectual? Preliminary findings in typhoid fever are suggestive of benefit. Certain of the newer antibiotics, particularly aureomycin, have demonstrated a direct ameliorating effect upon the plague toxin. Much work in this field is needed so that we may better cope with tetanus, diphtheria and other related infections.

For purposes of completeness, it is necessary to turn to the methods by which the various antibiotics act upon pathogenic agents. Penicillin probably exerts potent bacteriocidal or killing action, principally on the actively proliferating bacterial cell. Streptomycin may be bacteriocidal in high concentration but its action is primarily upon the slowly dividing or resting cell within a population. The newer broad spectrum antibiotics are suppressive and, actually, in the true sense of the word do not effect complete cure. Following their administration, healing depends upon the host defense mechanism to ultimately eradicate the suppressed offending microbe. Based upon experimental in-vitro and in-vivo tests penicillin and the newer antibiotics, when used in the same patient, militate against rather than supplement each others action. Chloromycetin, aureomycin and terramycin suppress the bacterial cell and theoretically deny penicillin an ideal atmosphere for action. On the other hand, penicillin and streptomycin have been shown to complement each other since it is known that in most bacterial populations there are actively proliferating cells as well as those in the dormant phase. Moreover, the combination of penicillin and streptomycin has been shown to be efficacious in the therapy of certain types of endocarditis, particularly those caused by enterococci, whereas either drug used singly resulted in clinical failure. Combinations, therefore, must await the results of further well controlled clinical trials before the experimental findings can be translated to human infections.

It behooves us, therefore, to weigh all eventualities before blindly administering an antibiotic. We should be prepared to answer several questions—1) Is an antibiotic really needed? 2) What is the proper drug and how long should it be given? 3) Is the administration going to alter in any way the ultimate immune status of the individual? 4) Is dual therapy needed or could it be harmful? 5) Is the microbial agent sensitive to the antibiotic being used and does it readily become resistant to the drug? Many infectious processes are self-limiting and benign in character and one must not lose sight of the fact that all drugs, like microbes, are potentially harmful to man.

Theodore E. Woodward, M.D

ISONICOTINIC ACID HYDRAZIDE IN THE TREATMENT OF PULMONARY TUBERCULOSIS; A PRELIMINARY REPORT*†

A. J. PROUST, M.B., B.S.‡ AND EDMUND G. BEACHAM, M.D.

In January and April 1952, the anti-tuberculous activity of Isonicotinic Acid Hydrazide was reported by several groups (1, 2, 3, 4, 5, 6). The drug was first used in the United States of America in June 1951 by Robitzek and his associates at Sea View Hospital, Staten Island, New York. It became available in limited quantities at Baltimore City Hospitals in February 1952. By April 1952, supplies were assured§ and a pilot study undertaken in 20 cases of pulmonary tuberculosis.

CHEMISTRY AND PHARMACOLOGY OF ISONICOTINIC ACID HYDRAZIDE

Isonicotinic Acid Hydrazide⁴ is a chemically pure synthetically produced substance with the general formula $C_6H_7N_3O$. It is an almost colorless crystalline compound highly soluble in water.

Its pharmacologic status is still largely undetermined. However, Benson and his associates (5) have shown that long-term administration of low concentrations in the diet of rats has no deleterious effects upon growth, erythrocyte counts, hemoglobin or gross appearance of the tissues. In dogs, long-term administration of Isoniazid in higher concentrations did have some effect on the reticulo-endothelial tissues and caused a significant drop in hemoglobin values.

Rubin and his associates have shown that Isoniazid is completely and rapidly absorbed from the gastro-intestinal tract of dogs and mice. Within an hour after oral administration, the drug appears to be well distributed throughout the blood serum, cerebro-spinal fluid and pleural fluid. It is largely excreted in the urine. It disappeared from the plasma completely in 16 hours. No cumulation of plasma concentration was observed in a twice daily schedule at four times the effective dosage.

On the basis of available studies, it appears that Isoniazid is of low toxicity in dosage ranges which are at the same time effective. However, 16 weeks therapy at 4-6 times the recommended dose in dogs has revealed on autopsy fatty degeneration of the liver, less marked fatty degeneration of the convoluted tubules and a decrease in the erythroid cells of the bone marrow.

DOSAGE AND TOXICITY IN MAN

At present, the indicated daily dosage is from 3-5 milligrams per kilogram of body weight divided into 2 doses, given orally. In these dosages, Isoniazid is rapidly absorbed from the gastro-intestinal tract reaching its highest plasma concentrations in 1½-3 hours. From 50-70 per cent can be recovered in the urine, excretion via

* From the Tuberculosis Division, Baltimore City Hospitals, Baltimore, Maryland.

† Received for publication August 11, 1952.

‡ From Sydney, Australia, formerly Resident in Tuberculosis, Baltimore City Hospitals.

§ Isoniazid was supplied by E. R. Squibb & Sons and Schering Corp.

¶ Officially designated Isoniazid and so called through paper.

this route reaching a peak in 2-6 hours. Appreciable and effective concentrations of the drug are present in the cerebro spinal fluid within 3 hours of an oral dose in patients with or without a meningitis. The recommended daily dosage gives rise to plasma concentrations of the drug which are considerably higher than those therapeutically effective in mice, as reported by Bernstein and his associates (8). Moreover, if the analogy in experimental animals is carried another step, it would appear that the effective plasma levels and the toxic plasma levels are safely separated.

In the dosage range recommended, the following toxic signs and symptoms have occasionally been reported (2, 4): constipation, muscular twitchings in the extremities, dizziness, slight drop in hemoglobin concentration, and traces of albumin and reducing substances in the urine.

ANTI-TUBERCULOUS ACTIVITY IN MAN

A bulletin of the American Trudeau Society, in March 1952, distributed only to members, listed changes to be expected in the clinical course of patients treated with the recommended dosage of Isoniazide. These included a reduction in fever, if present, usually within 2-3 weeks; reduction in cough; reduction in volume of sputum and in the number of bacilli therein (as determined by smear); gains in weight, appetite and strength; and some clearing of the reversible component of the pulmonary tuberculous disease by roentgenology.

These changes were based on the experiences of clinicians at Sea View Hospital, New York; Cornell Medical Center, New York, and the U. S. Indian Reservation Hospital, Arizona.

A more specific description of the results one could expect with Isoniazid as described by Robitzek and his associates and is as follows:

Weight Gain—An average weight gain of 2.2 pounds per week per patient in a series of 44 studies over 5-14 weeks. No patients lost weight.

Temperature—All 44 patients had fever ranging from 100 to 103 and higher. Forty-two of the 44 had prompt return to normal in from 2-21 days; an average of 10.

Sputum—All 44 had sputum prior to therapy, and 42 of these were consistently positive to concentrated smear. Twenty-three of the 44 lost all their sputum. Eight of the 42 with consistently positive sputum became negative, including gastric culture.

Roentgen-ray Changes—Twenty-two of the 44 showed improvement either diminished exudative disease in 5, or demonstrable contraction of cavities in 17.

There were no marked changes in red blood cells, white blood cells, hemoglobin, sedimentation rate, electrocardiogram, liver, renal tests or urinalysis. Occasionally a slight drop in hemoglobin was observed, and a few patients showed traces of albumin and reducing substances in the urine.

DEVELOPMENT OF BACTERIAL RESISTANCE

Since the first clinical reports were made, there have been studies conducted on emergence of tubercle bacilli resistant to Isoniazid. Steenken et al (10) reported resistant strains found as early as 26 days in chronic cavitary disease treated with Isoniazid or its isopropyl derivative. Bacilli were grown in media containing 0.5

microgram per milliliter whereas growth was normally inhibited by as little as 0.125 microgram per milliliter.

Combined Veterans Administration-Army-Navy studies (13) on patients receiving 150 milligrams of Isoniazid per day reported resistant bacilli. They studied 108 patients for 2-3 months and 141 patients for a period of from 3-4 months. In the 2-3 month's study 46 per cent or 49 showed positive cultures; of these 29 per cent produced bacilli which grew on a concentration of 5.0 micrograms per milliliter. In the 3-4 month group 65 per cent or 91 showed positive cultures, with 51 per cent producing resistant organisms.

SELECTION OF CASES AND METHOD OF STUDY

It was decided to choose patients with progressive pulmonary tuberculosis which had not responded to other anti-tuberculous drugs. Nineteen patients fitted this classification. One additional patient was selected to note the effect on a moderately advanced previously untreated case. All others had received streptomycin and para-amino salicylic acid in courses of varying length and were considered clinically resistant to these drugs. There were 9 white females, 6 negro females, 3 white males, and 2 negro males. Ages varied from 15 to 65 years.

Prior to therapy all patients were interviewed and an estimate made of their clinical status. Based on the nature and extent of their disease, fever, continued weight loss, and symptoms, the 20 patients were classified as follows: POOR—11—(All had far advanced pulmonary disease), FAIR—6—(Five had moderately advanced and one far advanced pulmonary tuberculosis), GOOD—3—(Two had moderately advanced and one far advanced disease).

Daily dosage of Isoniazid was 4 milligrams per kilogram of body weight given orally in 2 doses. Thirteen began treatment on 14 April, 1952 and seven on 28 April, 1952 so that by 4 August 1952 thirteen had been followed 16 weeks, and 7 for 14 weeks.

Associated with Isoniazid therapy strict bed rest was given to all patients. One patient had a pneumothorax and 3 received pneumoperitoneum, all started prior to the study and maintained throughout. Intermediate nourishment was offered to all patients.

Patients were weighed at the beginning of therapy and every 2 weeks thereafter. Ward nurses made daily estimation of the amount of sputum produced.

All patients had baseline chest roentgen studies made, hemograms, blood chemistries, and sputum cultures. The blood chemistries in all cases included nonprotein nitrogen, total protein and albumin/globulin ratio and many sodium, chloride, thymol turbidity, cephalin flocculation, and Van den Bergh estimations.

RESULTS OF THERAPY

I. CLINICAL STATUS

Seventeen of the 20 patients noted marked improvement in appetite and well being. The remaining 3 felt well at beginning of therapy and have maintained this status.

Generally, of the 11 who started therapy in poor clinical condition, 7 remained

in that category while 4 moved up to the fair category. One of these improved remarkably after all other therapy failed over a period of 18 months. She rapidly felt better, her temperature returned to normal from a daily average of from 100–101 F; she gained 18 pounds in weight from 83–101, her cough disappeared as did almost all of her sputum, but the chest roentgenograph showed little improvement.

Another patient experienced a reduction in fever, felt better, and increased his weight from 110 to 121 lbs. He also lost some of his toxemia.

Of the 7 with a "fair" status before therapy, 3 improved enough to be moved up into the "good" status. Some weight gain and loss of symptoms such as cough and toxemia were the reasons for this decision.

All 3 patients in the "good" classification improved some, and these also showed some clearing of the chest as observed by roentgenology. However, only in 2 cases could the improvement be regarded as significant.

To summarize, 9 out of 20 or 45 per cent of the patients after 14–16 weeks of therapy showed significant improvement.

II. WEIGHT GAIN

Counting any weight gain of more than 2 pounds over the 14–16 weeks period; 14 out of 20 patients gained weight.

The largest weight gain was 20 pounds in 16 weeks at 1.2 pounds per week. Three patients gained 18 or more pounds in 16 weeks.

The average weight gain per patient per week was 0.5 pounds with average weight gain for the period 7.3 pounds. One patient lost $3\frac{1}{2}$ pounds over a 13 week period, but at the end of 16 weeks had gained 1 pound over initial weight. Another lost 7 pounds during 14 weeks of therapy.

III. FEVER

Prior to therapy 4 patients had no significant fever, (i.e. an occasional rise to 99 F) 5 had fever between 99–99.5 F; 5 had fever up to 100, and 6 had fever of more than 100 F. After 13–15 weeks of therapy 3 out of 4 without significant fever continued the same. One developed occasional fever to 99.2 F over the last 2 weeks of the study, following a bronchoscopy. One patient developed a sharp rise in temperature to 104.2 F during the first 48 hours of therapy. This returned to previous levels on continued therapy.

Of the 5 with fever 99–99.5 F, 1 returned to normal; 1 had only occasional rises to 99 F; and 3 continued as before.

Of the 5 with fever up to 100 F, 1 returned to normal; 1 later returned to 99 F; and 3 were largely unchanged.

Of the 6 with fever greater than 100 F, 4 fell to 99.5 F; and 2 fell to normal, only to rise again after 6–10 weeks to 99.5 F.

In summary, only 2 patients with significant fever returned to normal and stayed there. However, there was noted a consistently downward trend toward normal. This could not be ascribed simply to bed rest.

IV. SPUTUM

Sixteen out of 20 patients raised sputum prior to therapy. Of these sixteen, 4 no longer raised sputum; 2 raised only very small amounts; 3 had significantly reduced their sputum; and 7 remained unchanged.

We have some information, though necessarily incomplete, on sputum conversion.

Fourteen were either consistently or intermittently positive prior to therapy, according to culture. These 14 had a series of concentrated sputum smears on July 10-14, 1952. Of these 14, 10 were still positive on every occasion after 11-13 weeks of therapy. Three, who were consistently positive prior to therapy, were negative to smear and one who was intermittently positive was also negative to smear.

V. ROENTGEN-RAY STUDIES

Of the 20 patients, 15 had roentgenologic evidence of exudative disease or cavities in which one could look for some change on serial films. The other 5 had either endobronchial disease or disease hidden by lucite balls or thoracoplasty. Chest roentgenographs were taken at 4-6 week intervals.

Of these 15, 5 had some improvement radiologically. One of these showed apparent cavity closure while another, the previously untreated case, showed marked absorption of exudative elements in her moderately advanced, right upper lobe lesion. These 5 improved clinically as well. The other 10 remained static although one made marked clinical improvement.

VI. URINALYSIS AND BLOOD CHEMISTRIES

No significant urine findings were discovered on routine laboratory examination, including microscopic. One patient showed an occasional trace of albumin and another, occasional traces of reducing substances.

No significant changes were discovered in non-protein nitrogen, thymol turbidity, cephalin flocculation, chlorides, sodium, or erythrocyte sedimentation rate.

Blood hemoglobin values almost uniformly rose, in many cases by as much as 3-5 gms.

Total protein rose significantly in 7 out of 20 cases, in 5 caused almost entirely by rises in serum albumin.

VII. TOXICITY

Treatment was not suspended in any case. Two patients complained of constipation, temporary in nature. Two complained of occasional mild dizziness. Five patients complained of muscle twitching in the extremities being the commonest and most disturbing complaint. Two patients complained of temporary insomnia at beginning of therapy; two others claimed they felt sleepier since therapy started.

DISCUSSION

The most significant result of 14-16 weeks therapy with Isoniazid in 20 patients was their marked increase in appetite and sense of well being. This was almost uniformly commented upon by patients and noted by observers. Another beneficial result was the marked reduction in cough and sputum production. These results, while not as remarkable as expected from previous reports, are encouraging. Chronically ill, wasting and even moribund patients felt better, ate better, slept better, and coughed less.

While 0.5 pounds weight gain per patient per week is far below Sea Views (2) 2.2 pounds per week per patient, it is of significance in patients who have been steadily losing weight.

Probably related to weight gain was the noted increase in hemoglobin and in the albumin fraction of total serum protein.

Reduction in fever was less remarkable than expected. Only 12 per cent of the patients had return to normal temperature, as against Robitzek's (2) 95 per cent. In addition, of those returning to normal temperatures for periods of 4-8 weeks, over one-half subsequently became febrile. Whether these corresponded to states of bacterial resistance is conjectural since resistance studies were not done.

The two items we were most interested in were changes in chest roentgenographs and reversal of sputum. We were discouraged with the poor response noted in the roentgen studies. It is possible that improvement is long delayed or perhaps there was less exudative component to be absorbed in cases that had been on previous streptomycin and paramino-salicylic acid therapy.

Again, continued appearance of acid fast bacilli on smear in patients under Isoniazid therapy made it appear less effective than streptomycin. During early months of streptomycin therapy we have found it most difficult to find tubercle bacilli by smear or culture.

Finally, accumulating reports of emergence of bacilli resistant to Isoniazid made us change our treatment regimen for these patients. We felt it was unwise to offer patients Isoniazid alone and as patients came up for review, following 3-4 months of therapy, we added streptomycin to those who had not been proved to be streptomycin resistant or had previous toxic reactions to it, and paramino salicylic acid to others who could not take streptomycin. We are awaiting information on roentgen-ray changes and emergence of resistant organisms under combined Isoniazid-streptomycin or Isoniazid-paramino salicylic acid therapy.

Ease of administration, low cost, and subjective and systemic improvement of patients under Isoniazid makes it necessary to continue study with this drug. At the present time, it has fallen far short of being the specific anti-tuberculous drug.

SUMMARY

Isoniazid has been used at Baltimore City Hospitals for 14-16 weeks in 20 cases of pulmonary tuberculosis. All but 1 case had received streptomycin-paramino salicylic acid for varying periods and was considered clinically resistant. Thirteen had far advanced tuberculosis, 7 moderately advanced pulmonary tuberculosis.

There has been marked subjective improvement in appetite and sense of well being,

marked reduction in cough and sputum production, increase in hemoglobin and serum albumin, and some reduction in fever. Toxic effects of the drug have been minimal and in no case caused discontinuance of medication.

In 10 of the 20 cases sputum smears were positive after 3 months treatment. Only 5 of the 20 cases showed improvement in their roentgenographs, only 1 was considered marked.

Reports of emergence of bacilli resistant to Isoniazid have caused us to add streptomycin or soda paramino salicylic acid to almost all cases at the end of the 14-16 week study.

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THE COMBINED USE OF TRIPLE SULFONAMIDES AND ORAL PENICILLIN IN PEDIATRIC PRACTICE* †

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INTRODUCTION

The many important advances during the past 15 years in the chemotherapeutic and antibiotic treatment of infectious diseases have created, for the physician, certain problems in their application in everyday practice. Foremost among these is the impracticability of laboratory studies on the etiologic bacterial and viral organisms of infections the practitioner must treat in his daily rounds. It is readily understandable how infeasible it would be to perform in the home studies which are generally reserved for patients with diseases requiring hospitalization, such as fulminating infections, relapsing and recurring infections, and those infections failing to respond to therapy. The many available agents for the treatment of infections creates, for the doctor, another problem—that of selecting for the therapy of a certain disease the most effective drug with the least toxic action on the host.

These problems, among others, have prompted the study of a preparation, which, it is hoped, will place in the physician's hands an agent characterized by wide-spectrum bacterial coverage and safety of application in the absence of bacteriologic studies. A drug of this type would be of especial interest to the pediatricist, since infections in children are often caused by several organisms acting simultaneously. Other prerequisites necessary for such a product are a high degree of effectiveness, low toxicity for the host, ease of administration and low cost. No single drug has thus far been shown to possess all of these attributes to a satisfactory degree, and therefore, a combination of drugs have been used.

Recently, Keefer (1), Vollmer et al. (2), Price et al. (3), Oard et al. (4), Coupa (5), Dowling et al. (6) and Collen (7) have focused attention on the apparent increased effectiveness resulting from a combination of penicillin and the sulfonamides. It has also been observed by several workers, Flippin et al. (8) and Frish and his co-workers (9), that the use of equal small doses of 3 sulfonamides in combination has not only been as highly effective as the drugs individually, but has decreased the incidence of crystalluria and urinary calculus formation, usually making alkalization unnecessary.

The importance of the role of the sulfonamides and penicillin when used individually in the treatment of infections has been well established. However, their use may be accompanied by certain inadequacies which impair their effectiveness. Among these are slow eradication of the etiologic agents, the development of drug resistant variants of bacteria, and limited range of spectrum coverage. It appears that when the sulfonamides and penicillin are combined and given in an oral form, the result

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† Received for publication May 1, 1952.

is highly gratifying. In the opinion of some workers (2), this results not only from a simple additive effect, but also from synergistic activity. Less frequent doses of such an oral combination also brings optimal therapeutic action (1, 2). At this point, it is well to remember that oral penicillin has fewer side and hypersensitive reactions than the parenteral form (1). In the opinion of the aforementioned papers, the apparent combination of the 2 agents, each of which has a different mode of attack on organisms, may delay or prevent the development of bacterial resistance.

The observations of other workers and the appearance on the drug market of such a combination for clinical use have further stimulated the observation of the effects on a miscellaneous group of infections in pediatric patients. In the final analysis, any therapeutic agent must stand on its clinical effectiveness to satisfy the practitioner as to its usefulness in daily practice. The following cases will demonstrate this fact concerning a combination of oral penicillin and group of the sulfonamides.

METHODS

In view of the above considerations, a combined product of triple sulfonamides and penicillin* was used in a series of varied pediatric cases to ascertain the clinical

TABLE I

	<i>No. Cases</i>
Acute otitis media.....	8
Tonsillitis.....	9
Bronchitis.....	4
Pneumonia.....	5
Impetigo.....	4
Vaginitis.....	2
Measles.....	7
Diarrhea.....	2
Abscess.....	2
Axillary adenitis.....	1

TABLE II

	<i>No. cases</i>
Staphylococcus aureus.....	8
Diplococcus pneumoniae.....	5
Bacillus proteus.....	1
Alpha streptococcus.....	5
Staphylococcus albus.....	4
Hemolytic streptococcus.....	4
Non-hem. streptococcus.....	4
Gonococcus.....	1
M. catarrhalis.....	3

response, palatability, side and toxic effects. This product was supplied in a 2 ounce bottle containing a heat-stable powder composed of 1.2 million units of crystalline penicillin G, buffered with 1 gram each of sulfadiazine, sulfamethazine and sulfamerazine. This product was diluted with tap water to make 2 ounces. Each 5 cc. of the resultant mixture contained 100,000 units of penicillin and .25 grams of the triple sulfonamide. The product was kept under refrigeration.

Patients were chosen from a non-selected group ranging in age from 1 month to 8 years, the mean being 23 months. The dosage was calculated on the basis of weight, using approximately .065 grams of the sulfa fraction per kilogram per day. Most of the cases were studied for confirmatory purposes only by culture, roentgenology or both.

OBSERVATIONS

The patients' weight ranged from 3.15 to 27.3 kilograms. The average calculated dosage given was .25 grams of triple sulfonamide and 100,000 units of penicillin every 6 hours. Forty-four patients were studied with the diseases as tabulated in Table I.

* Sulfa-Sugracillin—Supplied by Upjohn Company.

Bacteriologic studies revealed the predominant organisms to be as shown in Table II. Only 35 cases out of the 44 underwent a bacteriologic study.

All but 4 cases were given just 2 ounces of medication. The remaining 40 patients were kept on treatment for 1 to 6 days with the average duration being 3.75 days.

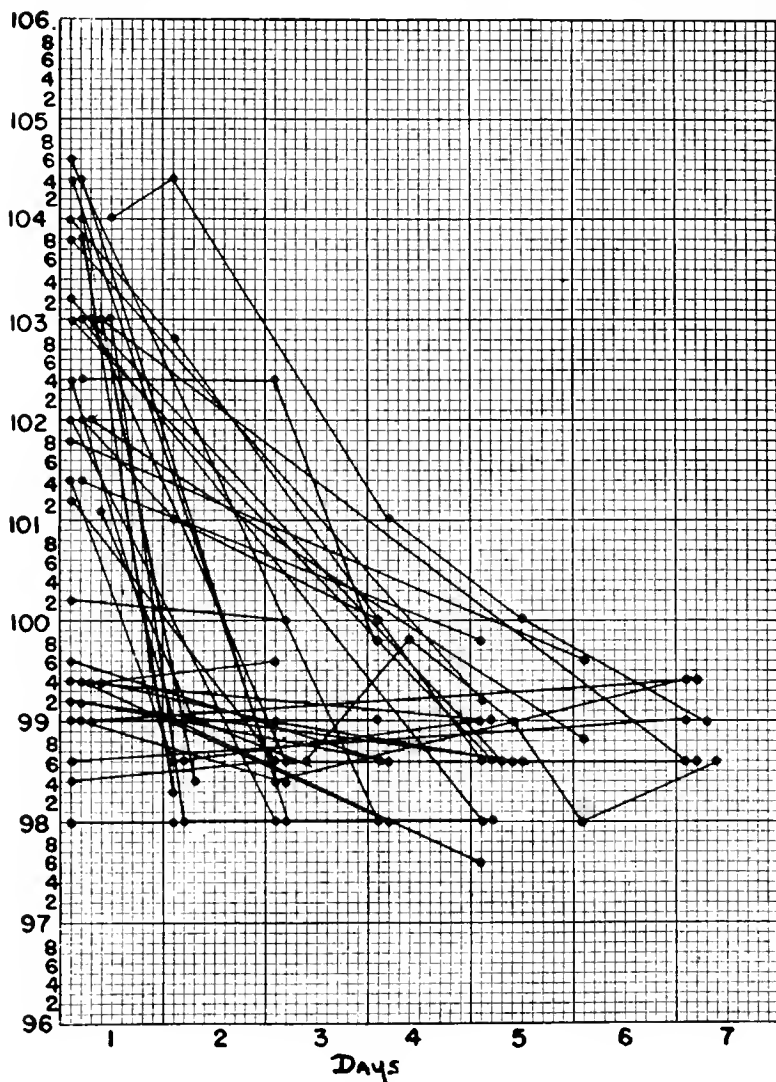


CHART I

The response of the infections was gratifying and prompt with only the following exceptions. One case of acute tonsillitis failed to respond favorably after two days of treatment, but responded in 18 hours to 400,000 units of penicillin by injection. Another case of tonsillitis with acute otitis media, bilateral, started with an asthmatic

wheeze (bronchitis) after 2 days of therapy. The same therapy was continued for another 2 days, but no change was noted until the institution of Terramycin by mouth. There were no complications except for one case of thrush which developed after 4 days of therapy. There were no cases where difficulty was encountered in administering the drug. Chart I clearly demonstrates the response of the fever following medication. The fever seemed to respond, on the average, within 24 to 36 hours, and the subjective symptoms subsided within the same range.

CASE REPORTS

B. S., a three year old female, weighing 32 pounds, was first seen with the complaint of fever and poor appetite. An examination revealed a toxic child with fever of 103 F and markedly injected tonsils covered with a removable membranous exudate which cultured as *A. Streptococcus*, *M. Catarrhalis* and diphtheroids. The child was started on the combined product, 2 teaspoons immediately and 1 teaspoon every 6 hours which lasted $3\frac{1}{2}$ days. On the second day of disease the temperature had returned to 98.6 F, and her appetite had returned. Since there were no untoward effects and having a normal physical examination on the fifth day, she was discharged.

F. F., an 11 month old male, weighing $26\frac{1}{2}$ pounds, was first seen because of drowsiness, fever and cough. Upon examination the patient showed a depression of breath sounds and fine rales at the base of the left lung with fluoroscopic changes confirming the clinical findings. The temperature was 102.4 F. On the combined therapy of 2 teaspoons immediately and 1 teaspoon every 6 hours, the child's temperature dropped to 99 F the next morning; he also had improved appetite. At the end of 5 days the clinical and fluoroscopic examination showed complete clearing of the lung fields and a normal infant.

COMMENTS

From these studies it appears that the combined sulfa-penicillin product, given in doses based on .065 grams of sulfa fraction per kilogram per day divided into 4 daily doses, provides a very effective treatment of the more common pediatric infections. The preparation provides the patient with a very palatable product which is well tolerated in all of the cases as evidenced by the lack of any toxic symptoms. From reports it is shown that the newer antibiotics will likewise prove effective, but oral administration is more difficult and often ineffective because of the toxicity as exemplified by vomiting and diarrhea. As is shown in Chart I, a rapid lowering of fever is obtained in an overwhelming majority of patients. In the same fashion, the disease process recedes. With a non-toxic, palatable and effective product of this type, the practitioner has a very useful weapon to combat infection initially, and can, if the infection has failed to respond to this therapy, substitute the more recent antibiotics to the maximal effect.

SUMMARY

1. Forty-four cases of common pediatric diseases were treated with a combined sulfa-penicillin product.
2. The results obtained confirm the gratifying conclusions of other investigators.
3. Dosage was established as .065 grams of sulfa fraction per kilogram per day given every 6 hours.
4. The cost of medication was minimal in contrast to more recent antibiotics.
5. The product was very palatable, convenient to administer in less frequent dos-

age with a high degree of effectiveness, wide bacterial spectrum coverage and low toxicity to the host.

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RECENT ADVANCES IN THERAPY*

JOHN C. KRANTZ, JR.

The one permanent characteristic of modern drug therapy is change. During the past decade these changes have occurred with kaleidoscopic rapidity. The magnitude of the mutation is evinced by the statement that 80 per cent of the pharmacologic agents available in the armamentarium of the physician in 1952 were not known a decade ago. Indeed the prognosis for the future appears equally fruitful. No chemical structure seems to be able to thwart the enterprising synthetic efforts of the organic chemist, and from his assembly line new organic chemicals roll off at the prodigious rate of about 10,000 a year. With the indefatigable efforts of the pharmacologist and bacteriologist, one anticipates the demonstration of the usefulness of some of these agents annually in the treatment of disease. The search is exciting, the struggle intriguing, and the stakes high.

THE ANTI-INFECTIVE DRUGS

The first consideration of this discussion will be the status of the anti-infective drugs. Despite the rapid advances in antibiotic therapy, the sulfonamide drugs still occupy an enviable position in the treatment of infectious disease. This is shown by the fact that in 1950 we used 7 million pounds of the various sulfonamides. Through an ever-lengthening experience with these compounds it now appears that the triple sulfonamide offers clinical advantages which are not encountered in the administration of a single sulfonamide. These advantages are a much lower incidence of crystalluria, a diminished degree of sensitization, and smaller total dosage with less frequent gastrointestinal distress. Of the three beneficial effects of the triple sulfonamide the diminished occurrence of crystalluria is the most striking. This stems from the fact that a mixture of two or three sulfonamides is more soluble than the total dosage of a single component. The drugs which appear most frequently in these mixtures are sulfadiazine, sulfamerazine and sulfamethazine.

One of the newer sulfonamides, which appears to be gaining in favor for genitourinary infections, is Gantrisin®. Gantrisin chemically is different from any of the commonly-used sulfonamides, as it contains an isoxazole nucleus instead of a pyrimidine nucleus, as do sulfadiazine and sulfamerazine. It is relatively highly soluble at pH 6. Furthermore, its acetylated derivative, formed in the body, also enjoys a relatively high solubility. With Gantrisin, renal blocking is no longer a factor in sulfonamide therapy.

Although antedated by the sulfonamide drugs as anti-infective agents, the antibiotics now occupy by far the more prominent position in the treatment of infectious diseases. From the thousands of antibiotic substances isolated, tested bacteriologically and some clinically, five agents occupy a position of preeminence: penicillin, 1941; streptomycin, 1944; Chloromycetin®, Aureomycin®, 1948; and Terramycin®, 1950. The crescendo of use of the antibiotic drugs is reflected in the volume of their in-

* Read before the Scientific Assembly of the American Academy of General Practice, at Atlantic City, March 26, 1952.

dustrial production, which now outranks that of all other medicinals. As early as 1948 the production of penicillin and streptomycin alone accounted for one-half of the total manufacturers' income from the sale of synthetic drugs. In 1950, of penicillin alone, 250 thousand pounds were used, amounting to 138 trillion units. A decade of therapy with these agents has made it possible to draw some rather interest-

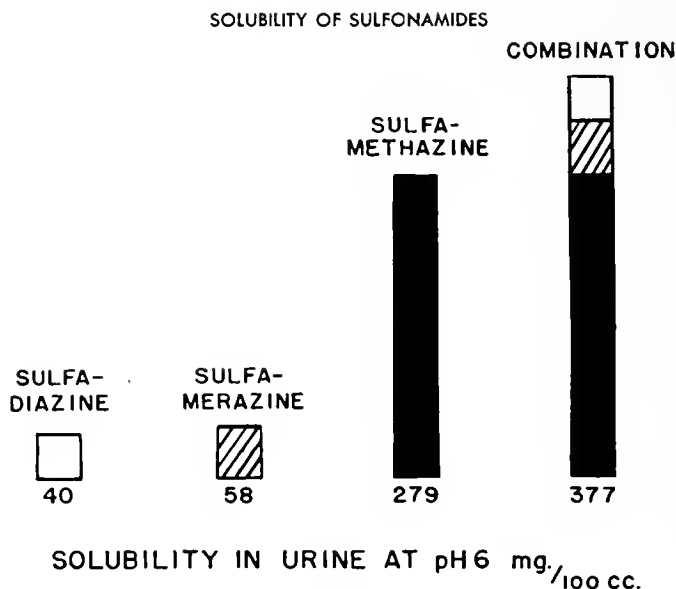


CHART 1

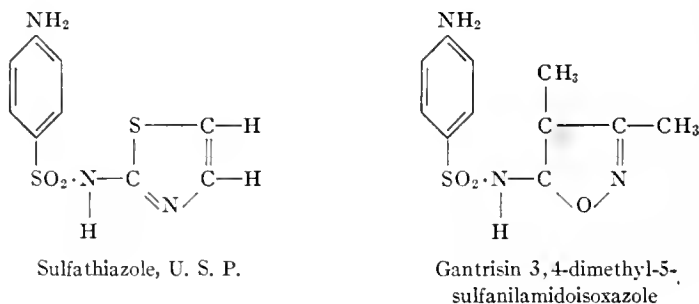


CHART 2

ing generalizations with regard to their fields of usefulness and the mechanism of their antibacterial actions.

Penicillin remains the drug of choice against gram-positive cocci, gonococci and the treponema. It is established that penicillin exerts its antibacterial activity in the premitotic stage of bacterial multiplication. The antibiotic appears to affect the ribonucleic acid in the cell wall of gram-positive organisms. Nucleic acid occupies a central role in bacterial protein synthesis, and seems to serve as the agent which

funnels energy into the protein-synthesizing mechanism. It is vitally concerned with the staining characteristics of the cell also. It is therefore apparent that the intervention at this vital mechanism by penicillin affords an explanation of the latter's action as an antibacterial agent.

Newer derivatives of penicillin have been synthesized recently. One of these is Compenamine®. It is the penicillin salt of N-methyl-1,2-diphenyl-2-hydroxyethylamine. The side chain of the molecule of this base is analogous in structure to ephedrine. The base appears to exhibit antiallergic properties. These do not seem to be related to the effects of the ordinary antihistamines. The combination of penicillin with this base reduces the incidence of allergy response to penicillin. Longacre states, "Compenamine can be given to patients known to be sensitive to other forms of penicillin with considerable assurance that if any reaction occurs at all, it will be minimal."

Another interesting derivative of penicillin is Bicillin®. This is N,N'-dibenzylethylenediamine dipenicillin G. It is stable, devoid of penicillin taste and available for oral therapy. A convenient aqueous suspension is available providing 300,000 units of penicillin in one teaspoonful.

Of the 193 thousand pounds of streptomycin used in 1950, nearly 85 per cent of it was employed in the treatment of tuberculosis. The antibiotic warrants a central role in the treatment of this disease. The use of para-amino-salicylic acid concomitantly with streptomycin to prevent the emergence of resistant strains of the mycobacterium tuberculosis is a distinct advance, and enhances the value of the antibiotic in tuberculosis therapy. Conteben®, made by the distinguished scientist Gerhardt Domagk, who used the first sulfonamide drugs, was used extensively in Europe in the treatment of tuberculosis. Known in this country as Tibione® and Myrizone®, this simple derivative of benzaldehyde was not found to be as useful as streptomycin in tuberculosis. What is more, severe side effects, such as blood dyscrasias, have militated against the use of this agent. Indeed the use of Tibione in tuberculosis is significant. Daniels (1950) very cogently stated: "Each advance in chemotherapy (of tuberculosis) tightens our criteria of evaluation and makes us more critical in an analysis of future advances, since new drugs must now be measured against those already proved effective."

The capacity of streptomycin to kill susceptible organisms is apparently due to its power to interfere with the reaction between pyruvate and oxalacetate (Krebs condensation) in cell metabolism. Thus one of the terminal steps in tissue respiration is altered by streptomycin. But this stage of tissue metabolism is also essential in animals as well as in the cells of the invading bacteria. It appears, however, that the animal plasmatic membrane serves as a barrier to streptomycin, preventing its penetrating to the site of this Krebs condensation reaction. Thus the animal metabolism does not share this deleterious effect produced by the antibiotic in the bacterial cell.

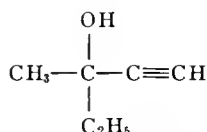
The observations of the use of derivatives of the hydrazides of isonicotinic acid in the treatment of tuberculosis are most exciting. Indeed early reports seem to indicate that only these mildly toxic compounds bid fair to play an important role in the treatment of this disease in the months and years which are to come.

The broad-spectrum antibiotics are Aureomycin, Chloromycetin, and Terramycin.

Their bacterial spectra in a large measure are overlapping. Nevertheless, abundant data are available for certain generalizations regarding their use. In the Rickettsial diseases, each of the three drugs appears to be equally effective. In the treatment of respiratory diseases such as pneumonia or atypical pneumonia, Aureomycin appears to be preferred to Chloromycetin or Terramycin. For genitourinary infections in general, Chloromycetin is favored by many. In the treatment of typhoid fever, Chloromycetin is the most effective of the three agents. In the treatment of amebiasis it appears at present, at least, that Terramycin is more effective than either of the other two broad spectrum antibiotics. Indeed frequently the choice of the drug must be conditioned by the patient's being able to tolerate it with minimal symptoms.

With regard to the mechanism of action of the broad-spectrum antibiotics, certain data are strikingly cogent. Aureomycin appears to inhibit aerobic phosphorylation of bacterial cells. Thus it alters the initial steps in the oxidation of carbohydrate—the storehouse of energy of the cell. On the other hand, Chloromycetin attacks bac-

Dormison



Sedative to the Central Nervous System

Capsules 250 mg.

CHART 3

terial metabolism by interfering with the esterase activity of the cell. Thus the cell is incapable of splitting fat into glycerin and fatty acid, and fat metabolism is checked. The mechanism of the action of Terramycin has not been completely elucidated.

CENTRAL NERVOUS SYSTEM DEPRESSANTS

As the tempo and complexity of our civilization increase, the need for depressants to the central nervous system increases also. A new hypnotic not of the barbituric acid series was introduced this year under the trade name of Dormison®. Dormison is a derivative of acetylene and is one of the first compounds of this chemical series to be used in clinical medicine. The compound is an oily liquid with a characteristic odor which is not pleasant. It is available in gelatin capsules containing 250 mg. The dose is one or two capsules. The action is prompt and because of the rapid metabolism and excretion of the compound, its sedative action is of short duration. The presence of this oil in the stomach appears to produce irritation of the gastric mucosa in sensitive individuals. Eructation sometimes follows the use of Dormison. It will be interesting to see whether or not this drug will continue to compete as a sedative with the barbiturates through the years. To my knowledge there have been no reports of serious sequelae resulting from the use of Dormison.

In the allaying of epilepsy, Paradione, another oxazolidine derivative, has taken its place along side of Tridione in the treatment of petit mal, myoclonic, akinetic and

psychomotor types of the disease. It appears that in cases in which Tridione is ineffective, Paradione®, its ethyl derivative, may be found useful. Also the converse is often encountered. Studies with compounds of various structures have permitted the following postulation by Toman with regard to the basic chemical nucleus necessary for antiepileptic drugs.

Added to the synthetic potent analgesics Demerol® and Methadone® are Dromoran® and Nisentyl®. These drugs appear to accomplish little in the field of analgesia which was not possible to achieve with the agents already in general use. One point becomes increasingly clear as the number of synthetic potent analgesics used clinically increases, i.e., that all of the substances capable of obtunding deep-seated

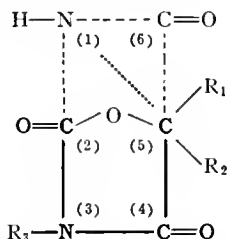


FIG 30. Basic Chemical Structure of Clinically Useful Antiepileptic Drugs (Toman, 1949)

Bold-face: Common denominator.

Dash-line: Barbiturate nucleus.

Dotted line: Hydantoin nucleus.

Thin solid line: Oxazolidine-2,4-dione nucleus.

Opening of the hydantoin ring between positions 1 and 5 gives the corresponding acetylurea.

CHART 4

visceral pain present also an addiction hazard. Let us fervently strive to overcome this in the years that lie ahead.

CENTRAL NERVOUS SYSTEM STIMULANTS

The number of new compounds useful as central nervous system stimulants is few. Dexedrine gains in popularity. Indeed recent studies indicate that in ordinary therapeutic doses only one pharmacologic effect is elicited and that is cerebral stimulation. The action appears to be confined to the higher centers in the cerebral cortex. The simultaneous administration of Dexedrine and the barbiturate Amytal, to confer mild psychic stimulation with a simultaneous tranquility of spirit is being employed by many clinicians. Proof of the value of the combination is not definitely established.

Picrotoxin in acute barbiturate poisoning is gradually being replaced by Coramine. The latter drug is definitely safer and results obtained in the hands of many clinicians are more favorable than those experienced with the more heroic picrotoxin.

SYMPATHETIC NERVOUS SYSTEM STIMULANTS

The large class of amines which mimic the action of epinephrine on the sympathetic division of the autonomic nervous system, called the sympathomimetic amines, con-

stitute an important segment of the physician's armamentarium. Some of the old group, ephedrine, Neosynephrine, Privine and Clopane, fall into this class.

A most interesting development in this field was the discovery by Auerbach and Angell (1949) that pure epinephrine contained from 12 to 18 per cent of arterenol. Arterenol is a precursor of epinephrine in the body. It differs from epinephrine by the absence of a methyl group on the nitrogen atom. The evidence now appears unequivocal that arterenol and epinephrine together are the neurohormones of the sympathetic division of the autonomic nervous system. There are several striking differences in the pharmacologic responses evoked by the two compounds. Only two which appear to have clinical significance will be mentioned. In human subjects the intravenous infusion of 10 to 20 mcg./Kg./min. of arterenol produced bradycardia. Epinephrine

Epinephrine and Arterenol

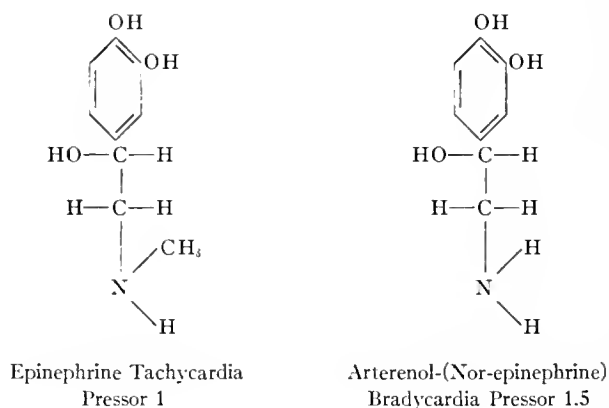


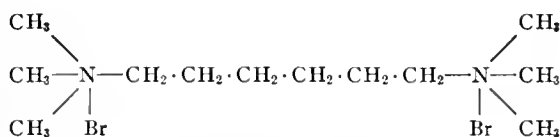
CHART 5

elicited tachycardia. Arterenol during the injection produced negligible subjective symptoms. Epinephrine elicited mild palpitation, hyperventilation, tightness in the chest and muscular fatigue. Second, the pressor response to arterenol is about one and a half times that evoked by epinephrine. It is therefore possible that arterenol is a factor in the pathogenesis of primary hypertension, where the blood pressure is increased without an increase of cardiac output. It will be interesting to observe whether or not this neurohormone will play the role of a therapeutic agent in the future.

ADRENERGIC AND GANGLIONIC BLOCKING AGENTS

Pharmacologic investigations have demonstrated within the last decade that certain chemical structures will produce ganglionic blockade in the autonomic nervous system. Others will specifically antagonize the activity of epinephrine at the effector cells of the sympathetic nerves. These studies have been of significant theoretical interest and have elucidated the role played by the autonomic nervous system and its neurohormones in the functional activity of many somatic systems. What is more, these studies have resulted in adding some adjuncts to the physician's armamentarium in the treatment of peripheral vascular disease, hypertension and peptic ulcer.

A newer type of ganglionic blocking agent appears to be gaining popularity in the treatment of peripheral vascular disease. This compound is Hexamethonium Bromide, commonly referred to as C₆ because 6 carbon atoms separate the two quaternary nitrogen atoms in space. Hexamethonium is a powerful pharmacologic agent. It is administered intravenously in 50 mg. doses. Finerty et al. (1950) found Hexamethonium gave rise to peripheral vasodilation, as measured by digital blood flow and skin temperature, to a greater degree and more prolonged than that produced by either Etamon or Priscoline. There are many accounts in the literature of the value of Hexamethonium administered parenterally in essential hypertension. The oral routine use of the drug has been in the main disappointing. However, Allen and Robertson (1950) reported excellent results in severe hypertension from the initial intramuscular use of the compound and the subsequent oral daily administration of 2 to 3 grams in divided doses. Experience has shown that tolerance to Hexamethonium frequently develops. In addition, untoward side effects such as diminished gastric motility, loss of ocular accommodation, xerostomia and postural hypotension



Hexamethonium Bromide

CHART 6

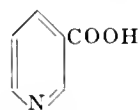
are frequently encountered. Further studies with this ganglionic blocking agent are desired.

One of the most generally-used drugs in peripheral vascular disease is 2-benzyl-imidazoline hydrochloride or Priscoline. This compound developed by Yonkman and his associates in 1945 has warranted a useful place in the treatment of peripheral vascular disease. However, its use in hypertension has been disappointing. Priscoline® is not a ganglionic blocking agent like Etamon® and Hexamethonium Bromide; on the other hand, it is an adrenergic blocking agent. It blocks the action of epinephrine at the effector cells in the walls of the arterioles. Parasympathetic activity is not interfered with by total ganglionic blocking under Priscoline therapy. Evidence points to the fact that the vasodilating action of Priscoline is local in character, and furthermore, that its effect is more pronounced on the blood vessels in ischemic tissues than on those in normal tissue. Many encouraging reports of the use of Priscoline in peripheral vascular disease continue to appear in the literature.

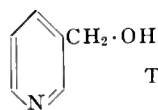
Recently another interesting drug has taken its place along side of Priscoline as a vasodilator. This compound is a derivative of nicotinic acid, namely, nicotinic alcohol tartrate or Roniacol® Tartrate. The reduction of nicotinic acid to its alcohol appears to prolong its action as a peripheral vasodilator. In addition, it appears that the side effects such as flushing and burning cutaneous sensation that are produced by the acid are not elicited by its alcohol. Several reports of the successful response to Roniacol appear in the literature. The drug is administered orally in divided doses

of 200 to 600 mg. a day. Undoubtedly this comparative nontoxic vitamin derivative is a welcome adjunct to the therapy of peripheral vascular disease.

Drug therapy in the treatment of peptic ulcer and associated gastrointestinal disorders rests rather firmly on the tripod of a sedative for the central nervous system, an antispasmodic and an antacid. For the first disorder, phenobarbital appears to be unquestionably the drug of choice. Atropine still plays a stellar role as the antispasmodic. However, as a cholinergic blocking agent in ulcer therapy, atropine produces annoying side effects and fails to relieve pain and hunger contractions in a segment of the patients. In 1950 Grossman stated, "What is sought is a cholinergic blocking agent with specificity for site of action." Banthine®, which is (β -diethylaminoethylxanthene-9-carboxylate methobromide) provides cholinergic blocking.



Nicotinic acid



Tartrate

Beta-pyridyl carbinol

Roniacol Tartrate

50 mg. tablets

CHART 7

Banthine

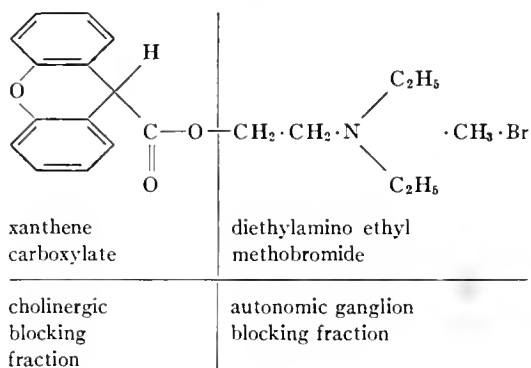


CHART 8

What is more, owing to its quaternary amine structure it blocks also the autonomic ganglia. Thus the administration of Banthine interferes with cholinergic activity at (1) the parasympathetic ganglia and (2) the parasympathetic effector cells in the viscera. Indeed, although the dose of Banthine is about one hundred times that of atropine, its capacity to relax the isolated intestinal strip of the guinea pig is about 70 per cent that of the former drug. Interpreted clinically, this means that in tolerated doses the tranquilizing effect on the gastrointestinal tract appears to exceed by far that of atropine. In clinical use the compound appears to have proved its value in the ulcer. Indeed McHardy et al. (1951) in a carefully-controlled series of patients having ulcers reached the conclusion that Banthine was superior to atropine as an antispasmodic in gastrointestinal hypermotility. It is quite encouraging to

witness the relief of epigastric distress in many patients where atropine appeared to be inadequate.

The neutralization, adsorption and buffering of gastric hyperacidity is accomplished quite well with magnesium trisilicate and hydrated aluminum oxide. The hydrogen ion adsorption resins (Resinat) appear to offer no advantage over the established

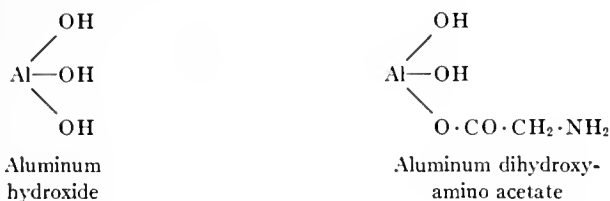


CHART 9

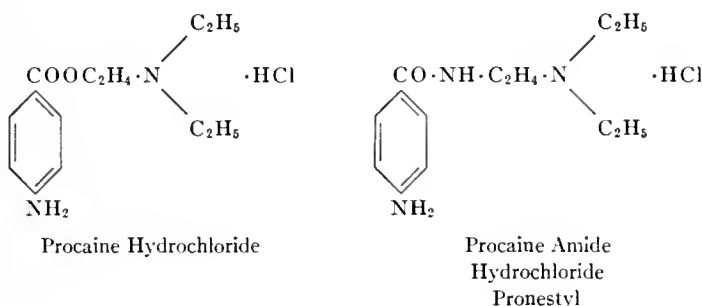


CHART 10

250 mg. I. V. Pronestyl

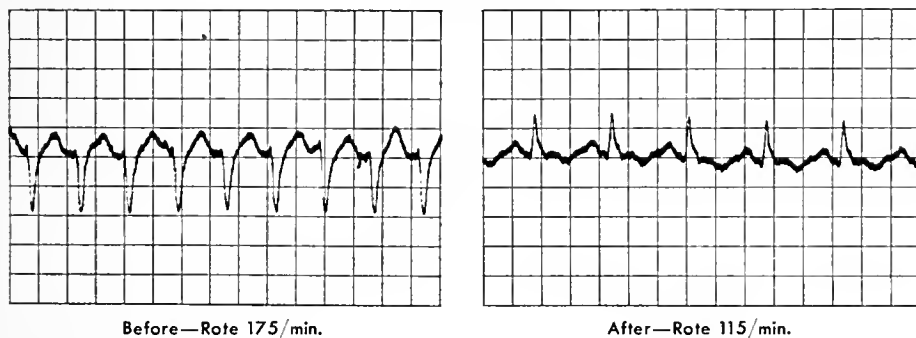


CHART 11

antacids. The union of a molecule of the amino acid glycine with one molecule of aluminum hydroxide, resulting in the formation of the compound aluminum dihydroxyaminoacetate, offers advantages over aluminum hydroxide. The advantages are promptness in the neutralization of gastric acid because of the presence of the amino group in the molecule and the prolonged effect of neutralizing newly-formed acid by the buffer system established. This antacid, available under various names such as Alglyn, Aspogen, Robolate, etc., is apparently increasing in popularity among gastroenterologists.

CARDIAC DRUGS

The digitalis glycosides still occupy the center of the stage in the treatment of auricular fibrillation with or without congestive heart failure. Recently quinidine has a competitor which bids fair to replace it in the treatment of ventricular arrhythmias and tachycardia. The compound is procaine amide and bears the following structural relationship to the local anesthetic procaine. The drug is available under the name of Pronestyl®. It is sufficiently nontoxic to permit intravenous medication in emergency

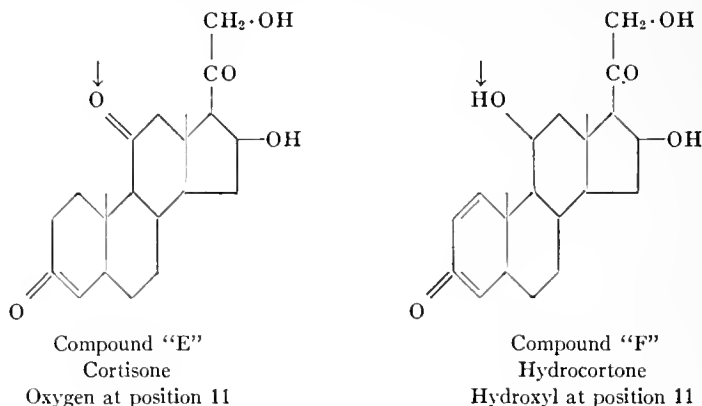
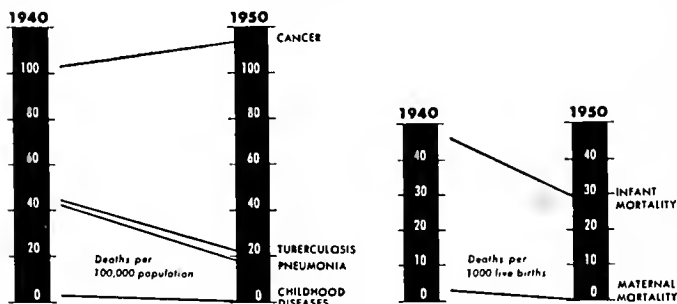


CHART 12

Antibiotics have revolutionized the treatment of disease and their scope is constantly widening



In the decade of antibiotics, death rates have shown a decided drop, except for the increase in mortality from cancer, a degenerative disease yet to be conquered

CHART 13

states. Also Pronestyl is available orally. The total daily dose is 2 grams, usually given in 0.5 gram quantities. The effectiveness of the drug in ventricular tachycardia is shown in the following chart. The selectivity of the compound for the ventricles is amazing. It appears to be a most valuable adjunct to the list of cardiac drugs.

ADRENAL CORTEX STEROIDS

The value of Cortisone is well established. Its limitations are usually recognized.

Foremost among these is the generalized distortion of electrolyte balance and metabolism. Therefore the therapeutic introduction of Kendall's Compound F in 1952 as Hydrocortone® was very well received. The relationship of Cortisone and Hydrocortone is shown on the chart.

Hydrocortone is injected intra-articularly in the form of a suspension in normal salt solution. It provides local relief at the affected joint without concomitant systemic effects. It therefore is especially valuable in rheumatoid arthritis when only one or two of the peripheral joints are affected. Clinical improvement may be seen in a joint from the injection of 25 mg. of Hydrocortone. The duration may extend from 3 to 21 days. Hollander et al. (1951) used the steroid in 69 cases of rheumatoid arthritis. The results were uniformly good and repeated injections elicited further amelioration of the systems. Undoubtedly this compound must be heralded as a distinct advance in adrenal cortex steroid therapy.

CONCLUSION

When the advances in modern drug therapy are reviewed it is notable that the most significant gains have been made in the field of the infectious diseases. Therapy in the degenerative diseases lags and it is delayed often because of paucity of knowledge regarding the precise nature of the etiology of the disease. The need for fundamental investigation in the area of medical science is urgent. Lest with the terrific conquests in the field of infectious diseases, portending an ever-aging and an ailing population, posterity looks back with a note of condemnation, stating, "They succeeded in substituting morbidity for mortality." The immortal words of Tennyson are appropriate to the subject:

*"Thou hast not scaled the height,
Or art thou nearer to the light,
Because the scale is infinite."*

THE TREATMENT OF CARDIAC ARRHYTHMIAS WITH PROCAINE AMIDE (PRONESTYL®)*†

KYLE Y. SWISHER, JR., M.D. AND WM. CARL EBELING, M.D.

During the latter half of the past decade, extensive clinical usage established the value of intravenous procaine in the control of ventricular arrhythmias observed during anesthesia (1, 2, 3, 4, 5, 6, 7, 8, 9, 10). In 1949, Rosenberg and associates (11) reported that diethylaminoethanol, one of the in-vivo hydrolytic products of procaine (12), also exerted an anti-arrhythmic activity on the heart. Rosenberg et al. (11) employed diethylaminoethanol to prevent the development of epinephrine-induced ventricular irregularities in dogs anesthetized with cyclopropane, and reported the beneficial effect of diethylaminoethanol in suppressing ventricular premature contractions and reversing ventricular tachycardias in human subjects.

Procaine is more active (11) than diethylaminoethanol as an antiarrhythmic drug, but the transient action of procaine and its central nervous system stimulatory effects have precluded its use, except in anesthetized subjects. Similarly, diethylaminoethanol was found to be of limited value because of its hypotensive effects and in-vivo instability (13). In an attempt to find a more satisfactory antiarrhythmic drug, Mark et al. (14) tested various esters and amides of diethylaminoethanol for their antiarrhythmic activity and found that the amide of procaine (Pronestyl)‡ was the most promising, as regards stability, therapeutic effect and low toxicity.

Mark and his associates have pointed out the therapeutic advantages of procaine amide as compared to procaine and diethylaminoethanol (13): 1) Procaine amide is relatively stable in the body, plasma levels of the drug declining slowly at the rate of 10-15 per cent per hour; 2) It is absorbed completely from the gastro-intestinal tract and can, therefore, be administered orally; 3) Its antiarrhythmic activity is of much longer duration than that of procaine and diethylaminoethanol as demonstrated in dogs; 4) The only untoward reaction yet reported following its use in humans has been an occasional hypotensive effect.

Reports in the literature concerning the employment of procaine amide in the treatment of cardiac arrhythmias in humans are few in number and most of them deal with the intravenous administration of the drug. Kinsman et al. (15) reported that the intravenous administration of procaine amide was of definite value in restoring normal rhythm in 13 patients, who exhibited either ectopic ventricular contractions or paroxysmal ventricular tachycardia. Using intravenous procaine amide, Stearns and Callahan (16) were able to abolish ventricular tachycardia in seven of eight patients and eliminate multiple ventricular ectopic beats in eight of 12 patients. Thirteen patients with ventricular or nodal arrhythmias attributed to digitalis toxicity responded to procaine amide, whereas in two cases of similar etiology the drug was without effect. A fall in blood pressure occurred in fourteen patients in spite of slow infusion rates and the authors warn that, "the drug should be administered by

* From the Department of Medicine, University of Maryland School of Medicine, Baltimore.

† Received for publication September 28, 1951.

‡ Supplied by E. R. Squibb and Sons.

this route only to patients with susceptible arrhythmias where immediate conversion is highly desirable." Procaine amide, administered orally immediately preceding cardiac catheterization, has been shown (17) to significantly protect patients from dangerous arrhythmias during the procedure. On the other hand, Morris and Haid concluded from a combined laboratory and clinical study, that procaine amide afforded no protection against ventricular arrhythmias during cyclopropane anesthesia (18). Mark and associates have recently published (14) the results obtained with procaine amide in the treatment of a large number of patients exhibiting cardiac arrhythmias. They employed both oral and intravenous procaine amide and found both means of administration effective in treating arrhythmias of ventricular origin. The latter investigators did not stipulate what percentage of patients were treated with oral procaine amide, and with the exception of their report, relatively little information has been forthcoming concerning the value of the oral form of the drug in conscious humans suffering from cardiac arrhythmias. This report describes the results obtained with procaine amide in the treatment of 21 episodes of cardiac arrhythmia occurring in 19 patients.

Our studies have been confined, for the most part, to the oral administration of procaine amide to unanesthetized patients, who were suffering from cardiac arrhythmias of a paroxysmal character. At the outset it was decided to attempt the control of supraventricular paroxysmal tachycardias as well as arrhythmias of ventricular origin. The early results were encouraging and we subsequently employed procaine amide as the drug of first choice in all forms of cardiac arrhythmias, with the exceptions of auricular flutter and auricular fibrillation.

Included in the series are 7 cases with ventricular arrhythmias, 10 cases with supraventricular arrhythmias, and 2 cases presenting combined auricular and ventricular arrhythmias.

METHOD OF STUDY

In each patient encountered, diagnosis was established by means of the history, physical examination, and electrocardiogram. Immediately after the type of arrhythmia was determined, procaine amide was administered orally in dosages varying from 0.5 to 1.5 grams. Electrocardiograms were taken at approximately 15 minute intervals until the arrhythmia had reverted to sinus rhythm. If conversion did not occur within one hour, a second dose of 1.0 gram of procaine amide was administered. Following control of the arrhythmia, a maintenance dose of 0.25 to 0.5 gram was given every 4 to 6 hours in all but 7 patients. Two patients were treated with intravenous procaine amide. In the patients with supraventricular tachycardias, the drug was administered only after ocular and carotid sinus pressure had failed to convert the rhythm to normal.

RESULTS

The detailed observations on each patient are summarized in Table I.

I. *Supraventricular Arrhythmias*: The administration of procaine amide to 7 patients with paroxysmal supraventricular tachycardia was followed by the cessation of the abnormal rhythm in all cases. Six of the 7 patients were treated with initial

TABLE I
Pronestyl Treatment of Cardiac Arrhythmias

NO.	AGE	SEX	PRIMARY DIAGNOSIS	TYPE OF ARRHYTHMIA	VENTR. RATE PER MIN.	DURATION IN HOURS BEFORE TREATMENT	INITIAL ORAL PROCAINE AMIDE (IN GRAMS)	RESULT	VENTR. RATE PER MIN.	MAINTENANCE DOSE (IN GRAMS)	SIDE EFFECTS
Supraventricular Arrhythmias											
1	54	F	Hypertensive Heart Disease	Par. Supraventricular Tachycardia	187	1	0.75	Sinus Rhythm in 1 hour.	90	None	None
2	70	M	Arteriosclerotic Heart Disease; Acute Myocardial Infarction	Par. Supraventricular Tachycardia; Intraventricular Block	150	10	0.5	Sinus Tachycardia in 1.5 hours.	120	0.5 after 4 hours	None
3	51	F	Acute Aortic Valvulitis; Meningitis; due to Streptococcus Viridans	Par. Supraventricular Tachycardia	190	1.5	0.3*	Sinus Tachycardia in 1/4 hour.	120	0.1* after 2.5 hours	None
4	32	F	Obesity	Par. Supraventricular Tachycardia	214	60	1.0	Sinus Rhythm in 1 hour.	86	0.5 q.6 hours for 4 days; then 0.25 q.6.hours for 7 days	None
5	40	F	Hypertensive Heart Disease; Thyroid Adenoma	Par. Supraventricular Tachycardia	200	22	1.0	Sinus Rhythm in 3/4 hour.	94	0.25 q.6 hours for 7 days	None
6	22	M	Wolff-Parkinson-White Syndrome	Par. Supraventricular Tachycardia	210	7	1.0	Sinus Rhythm in 2 hours.	94	1.0 after 1 hour & 0.5 q.6 hours for 8 days	Vomited initial dose.
7	23	F	Anxiety Neurosis	Par. Supraventricular Tachycardia	180	6	1.0	Sinus Rhythm in 2 hours.	100	None	None
8	54	F	Hypertensive Heart Disease; Obesity	Par. Auricular Tachycardia	160	48	1.0*	No effect	160	None	Dizziness. No blood pressure change.

Ventricular Arrhythmias

9	55	F	Hypertensive Heart Disease	Paroxysmal Auricular Tachycardia	185	14	1.0	No effect, after 2.0 Gm., in 2.5 hours	180	None	None
10	69	M	Generalized Arteriosclerosis; Diabetes Mellitus with acidosis; Pycnephritis with E. Coli Septicemia	Auricular Flutter 2:1 A-V Block	120	96	1.0	No effect. Quinidine gluconate, 0.2 gm. intravenously 2 hours later caused runs of Ventricular Premature Beats.	120	None	None
11	48	M	Myocardial Infarction; Duodenal Ulcer	Par. Ventricular Tachycardia	150	5	1.0	Sinus Rhythm in 2 hours.	83	1.0 after 1 hour; 0.5 q.6 hours for 9 days; 0.25 q.6 hours for 3 days; 0.25 q.8 hours for 4 days	None
12	41	M	Acute Myocardial Infarction	Ventricular Premature Beats; Runs of Ventricular Tachycardia; Average of 20 abnormal complexes per minute.	110	4	1.0	Sinus Tachycardia in 2½ hours.	110	0.5 q.6 hours for 1 day	None
13	62	M	Acute Myocardial Infarction	Ventricular Premature Beats; Runs of Ventricular Tachycardia; Average of 16 abnormal complexes per minute	90	1½	1.5	Sinus Rhythm with average of 4 to 5 single Ventricular Premature beats per minute after 1 hour.	90	0.5 q.4 hours for 4 days. Ten days later 0.5 q.6 hours for 1½ days	Severe diarrhea. Recurrence of diarrhea.
14	56	F	Carcinoma, Left Breast; Obesity; Arteriosclerosis	Sinus Tachycardia with average of 18 Ventricular Premature Beats per minute.	112	Weeks	1.0	1 Ventricular Premature Beat per minute after 6 hours.	98	0.5 q.4 hours for 4 days, then 0.5 q.6 hours for 12 days.	None

TABLE 1—Continued
Procystyl Treatment of Cardiac Arrhythmias

NO.	AGE	SEX	PRIMARY DIAGNOSIS	TYPE OF ARRHYTHMIA	VENTR. RATE PER MIN.	DURATION IN HOURS BEFORE TREATMENT	INITIAL ORAL PROCYSTEINE AMIDE (IN GRAMS)	RESULT	VENTR. RATE PER MIN.	MAINTENANCE DOSE (IN GRAMS)	SIDE EFFECTS
Ventricular Arrhythmias—Continued											
15	43	M	Myocardial Infarction	Ventricular Premature Beats; Runs of Ventricular Tachycardia; Average of 12 abnormal complexes per minute.	124	18	0.5	After 48 hours, 1 Ventricular Premature Beat every 3–4 minutes.	96	0.5 q.6 hours for 2 days, then 0.5 q.4 hours for 4 days	Nausea, Vomiting
16	61	F	Myocardial Infarction	Paroxysmal Ventricular tachycardia	170	6 (?)	1.0	No effect after 2 doses of 1.0 Gm each, one hour apart.	170	None	None. Death within 24 hours of admission.
17	57	M	Myocardial Infarction	Paroxysmal Ventricular tachycardia	160	7	1.0	Sinus Rhythm in 2 hours	96	0.5 Gm every 6 hours for 5 days	None.
Combined Auricular and Ventricular Arrhythmia											
18	67	M	Arteriosclerotic Heart Disease; Acute Myocardial Infarction	Auricular Fibrillation with occasional Ventricular Premature Beats per minute.		12	0.75	Aur. Fibrillation unaffected. No Ventricular Premature Beats after 4 hours.		0.5 q.6 hours for 4 days	Nausea, Vomiting
19	62	M	Arteriosclerotic Heart Disease; Acute Myocardial Infarction; Cholelithiasis	Auricular Fibrillation with occasional Ventricular Premature Beats per minute.		?	0.5	Aur. Fibrillation unaffected. Rare Ventricular Premature Beats per minute after 4 hours.		0.5 q.6 hours for 3 days	None

* Administered intravenously.

oral doses of procaine amide ranging from 0.5 to 1.0 gram, and in each of these cases, the tachycardia stopped within a 2 hour period. One of the seven patients exhibiting supraventricular tachycardia (case 3) was treated with 300 milligrams of procaine amide intravenously. The tachycardia stopped promptly. All 7 recovered patients were observed for a minimal period of 5 days after treatment, during which time the rhythm remained normal. It should be noted that 5 of the patients received maintenance doses of procaine amide for variable time intervals.

Two patients (cases 8 and 9) in this series presented arrhythmias which were interpreted electrocardiographically as paroxysmal auricular tachycardia. In case 8, one gram of procaine amide given intravenously over a 30 minute period, failed to reverse the abnormal rhythm. In case 9, two grams of procaine amide in a period of 2.5 hours failed to abolish the arrhythmia which subsequently responded to digi-toxin.

The oral administration of 1.0 gram of procaine amide was without effect in one patient with auricular flutter and failed to prevent the development of premature ventricular systoles induced 2 hours later by intravenous quinidine.

II. *Ventricular Arrhythmias*: Procaine amide was employed successfully in the treatment of 6 patients from a group of 7 with cardiac irregularities of ventricular origin; in one case there was failure. Six of the 7 patients had suffered acute myocardial infarction. Three of these 6 patients (cases 11, 16, and 17) had continuous ventricular tachycardia which stopped within 2 hours after the oral administration of 1.0 gram of procaine amide in 2 cases, but persisted until death in the third case. The other three cases (12, 13, and 15) in the postinfarction state had transient episodes of ventricular tachycardia alternating with sinus rhythm. Following the oral administration of procaine amide in dosages varying from 0.5 to 1.5 grams, the periods of ventricular tachycardia were abolished, although occasional ventricular premature beats continued to occur at infrequent intervals in 2 of the patients (cases 13 and 15). In the remaining patient (case 14), who exhibited 16-20 premature ventricular systoles per minute, the oral administration of 1.0 gram of procaine amide resulted in a decrease of premature systoles to one per minute after a 6 hour interval.

All of the patients except case 16 were continued on maintenance doses of procaine amide and further episodes of ventricular tachycardia were not detected.

III. *Combined Auricular and Ventricular Arrhythmias*: Two patients with combined auricular and ventricular arrhythmias were treated with oral procaine amide. Both patients had recent infarction of the myocardium and electrocardiographically each exhibited auricular fibrillation and premature ventricular systoles. Procaine amide was without effect on the auricular fibrillation. In one patient (case 18), the premature ventricular systoles were permanently abolished and in the other patient (case 19), the frequency of premature systoles was markedly decreased. The patients were continued on maintenance doses of procaine amide and their convalescence was uneventful.

SIDE EFFECTS

Untoward effects incident to procaine amide therapy were minimal in this group of patients. One patient (case 13) developed severe diarrhea while taking procaine

amide, 0.5 gram every four hours orally for four days, and the diarrhea disappeared 24 hours following cessation of procaine amide therapy. Two weeks later, while receiving procaine amide, 0.5 gram every six hours, this patient again had explosive diarrhea which subsided when the drug was discontinued.

Two patients, (cases 15 and 18), experienced nausea, flatulence and vomiting while taking 0.5 gram of procaine amide orally every four to six hours. In neither of these patients was it necessary to discontinue the drug. One patient, (case 8), developed dizziness after receiving 1.0 gram of procaine amide intravenously over a period of 30 minutes, but the blood pressure did not fall below the pre-treatment level.

DISCUSSION

From our limited experience with this small group of patients, we feel that oral procaine amide has a wide sphere of usefulness in the treatment of patients with paroxysmal cardiac arrhythmias, excluding those of auricular origin. In all of the patients with arrhythmias designated as supraventricular tachycardia, we were unable to establish by electrocardiogram, the site of origin of the abnormal impulse, i.e., whether it was of auricular or nodal origin. Numerous clinical reports (11, 14, 15, 16, 19, 20), reiterate the observation that arrhythmias of auricular origin only rarely respond to procaine or its derivatives. On the basis of these observations and in the light of our own experience, it is postulated that the cases of supraventricular tachycardia herein reported, were of the nodal type since they all responded to procaine amide. Further studies concerning the effect of procaine amide on supraventricular tachycardias, whose sites of origin can be identified by means of the electrocardiogram, are needed to substantiate or discredit this supposition.

In our hands, the drug has caused no striking untoward effects, even though many of the patients who received it were critically ill. Administration has been no problem with either the capsules or the intravenous solution. In this group of patients, two received intravenous procaine amide and in each case, administration was made under careful observation for the appearance of hypotension. The safe dosage range is apparently wide and the drug is well tolerated by the patients. Good results were obtained in 7 cases of supraventricular paroxysmal tachycardia, three cases with ventricular premature systoles, and 5 of 6 cases of ventricular tachycardia. Procaine amide was without beneficial effect in two cases of paroxysmal auricular tachycardia, one case of auricular flutter and two cases of auricular fibrillation, as anticipated, and in keeping with the results obtained in auricular arrhythmias by previous investigators. The efficacy of procaine amide in the treatment of patients with supraventricular tachycardia, and ventricular arrhythmias has, in our opinion, been uniformly satisfactory.

The experience thus far accumulated by us and other investigators obviously needs further amplification before definite and indisputable indications for the use of procaine amide can be outlined. However, on the basis of available data, we feel that the therapeutic use of procaine amide is justified and perhaps specifically indicated in the following situations:

(a) In paroxysmal supraventricular tachycardias (other than those identifiable by electrocardiogram as being of auricular origin) which fail to respond to mechanical vagal stimulation

(b) As a maintenance drug in the prevention of frequently recurring episodes of nodal tachycardia

(c) To control nodal and ventricular premature systoles which cause otherwise healthy individuals undue subjective distress

(d) To abolish paroxysmal ventricular tachycardia and ventricular fibrillation under any and all circumstances

(e) To control nodal and ventricular premature systoles which occur following myocardial infarction, as a prophylaxis against more serious arrhythmias

(f) To control ventricular arrhythmias due to digitalis intoxication

(g) As a prophylactic agent to protect patients undergoing cardiac catheterization

SUMMARY

1. In 19 patients with cardiac arrhythmias, the administration of procaine amide was followed by the restoration of normal rhythm in all cases exhibiting paroxysmal supraventricular tachycardia and in 5 of 6 cases with paroxysmal ventricular tachycardia.

2. Procaine amide was definitely without beneficial effect in two patients with auricular fibrillation, one patient with auricular flutter, one patient with paroxysmal ventricular tachycardia, and two patients with paroxysmal auricular tachycardia.

3. Untoward effects observed following the oral administration of procaine amide were infrequent and mild, consisting of nausea, flatulence, vomiting and diarrhea.

4. Although further experience is mandatory before specific indications for procaine amide therapy can be conclusively and indisputably delineated, we have summarized, on the basis of available data, the conditions and circumstances in which procaine amide shows promise as a probable efficacious agent.

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CHRONIC PEPTIC ULCER OF THE THIRD PORTION OF THE DUODENUM WITH PERFORATION INTO THE AORTA: REPORT OF A CASE*†

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The unusual location and sequelae of the peptic ulcer in this case are thought to be of sufficient interest to justify a report. A search of the medical literature of the past 15 years shows but one case reported in which an ulcer occurred in the distal parts of the duodenum (1).

CASE REPORT

The patient was a 67 year old white male who was admitted to the Washington County Hospital, Hagerstown, Maryland with a tentative diagnosis of possible coronary occlusion. The evening before the day of admission he fainted while having a bowel movement. There was said to be no pain associated with this episode. When seen by his family physician, he was in a state resembling shock and the physician suspected this to be due to an acute blood loss. On questioning it was revealed that his stools had been tarry for one week. He recently had a gastro-intestinal x-ray examination performed. This was said to be negative.

On admission to the hospital the following morning, the patient had a red blood cell count of 1.43 million cells per cubic millimeter, a white blood cell count of 6600 cells per cubic millimeter and five grams of hemoglobin per 100 cubic millimeters of blood. An electrocardiogram showed no evidence of a coronary accident. One thousand cubic centimeters of whole blood were administered during the day of admission. At 6:30 A.M. of the second hospital day the patient had a massive hematemesis and died within a few minutes.

NECROPSY FINDINGS

Post-mortem examination of the body showed the nasal passages and buccal cavity to be filled with recently shed blood. The pre-aortic portion of the duodenum was found to be fixed posteriorly to the regional structures. On opening the small intestine, in the third portion of the duodenum, just as it curves superiorly, there was a punched out ulcer measuring 1.8 centimeters in diameter and having a depth of approximately one centimeter. On probing the ulcer, it was found to be continuous with the lumen of the abdominal aorta, and when this structure was opened, the continuity was affirmed. A firm antemortem thrombus was adherent to the wall of the aorta at the site of perforation. There was both recent and remote extravasation of blood into the adjacent retroperitoneal tissues. The entire gastro-intestinal tract contained blood in various phases of degeneration, with tarry feces filling the descending and sigmoid colon.

Microscopic section from the duodenum taken through the ulcer-bearing portion showed the mucosa regional to the ulcer to be mildly hypertrophied. The stroma was

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† Received for publication February 22, 1951.

crammed with mononuclear cells and plasma cells. At one point the epithelium was abruptly denuded and the mucosal edges were undermined for a short distance. The base of the ulcer was formed by granulation tissue in which numerous plasma cells, mononuclear cells, lymphocytes, and pigment-laden macrophages were found. There was considerable inflammatory reaction throughout all layers of the duodenal wall adjacent to this area, including fibrosis, capillary proliferation, infiltration by acute and chronic inflammatory cells, phagocytosis of cellular debris by macrophages, and in-wandering of giant cells. The delimitation between the serosa of the duodenum and the underlying wall of the aorta was barely detectable, although a mass of muscle fibres resembling the media of the artery was seen. What appeared to be the intraluminal surface of the aorta was covered by fibrinoid material with numerous enmeshed pigment-bearing phagocytes. A small peri-aortic lymph node was enveloped by the inflammatory process.

SUMMARY

A case of chronic peptic ulcer of the third portion of the duodenum with perforation into the aorta is reported. The penetrating process apparently took place over some period of time with a slow erosion of the aorta and extravasation of blood into the surrounding retroperitoneal tissue. There was an attempt to close the aortic rent by formation of a large mural thrombus at the site. The terminal episode occurred with a breakdown of the thrombus, complete perforation into the aorta, and massive hemorrhage into the gastro-intestinal tract.

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CLINICO-PATHOLOGIC CONFERENCE

From the Case Histories, University Hospital, Baltimore

CLINICAL HISTORY

The patient discussed in this conference was a thirty-two year old white male who appeared at the hospital on February 22, 1951, complaining chiefly of nausea, vomiting, abdominal pain and fever of one day's duration. This illness was his first since he was put to bed for suspected tuberculosis at the age of fourteen years.

Recently, while in the military service, he had had an illness diagnosed as acute infectious hepatitis. Prior to this he had not received blood transfusions or yellow fever vaccine. One year later there was a recurrence of a similar illness. Subsequently, he was returned to full duty and saw service overseas. In June, 1946, the patient was hospitalized at another hospital because of recurrent jaundice. At that time, his icteric index was 50 and bromsulfalein retention was 47 per cent at the end of 45 minutes. By October, 1946 his liver function had returned to normal. He was then discharged to resume normal activities.

In May, 1948 the patient had anorexia, weakness and exhaustion. On May 22, 1948 he began to have itching and three days later jaundice appeared. The following day he noted that his urine was dark and his stools were clay-colored. He began to have vomiting 4 or 5 times weekly. At that time, on admission to another hospital, a physical examination showed jaundice, spider hemangiomas, marked hepatomegaly and slight splenomegaly. Serum bilirubin was 19 mgm. per cent; albumin, 3.3 grams per cent; and globulin, 3.5 grams per cent; cephalin flocculation, four plus; prothrombin time, 18 seconds with a control of 15 seconds.

On September 27, 1948, the patient had an exploratory laparotomy and liver biopsy. During that hospitalization chest roentgenographs were negative. A "flat plate" of the abdomen showed a considerably enlarged spleen. There were no demonstrable esophageal varices. After a prolonged postoperative convalescence, the patient was discharged and finally became ambulatory on December 24, 1948.

The patient was admitted to the University Hospital for the first time on March 6, 1949. During the 11 hours before admission he had low abdominal pain, nausea and three loose stools but no vomiting. All observers thought the patient had acute appendicitis. Because of his repeated attacks of hepatitis, it was believed that surgery was contra-indicated. Therefore, he was treated with intravenous fluids and aureomycin. Rapid symptomatic improvement followed. On March 9, 1949 he was discharged to continue aureomycin therapy at home.

On August 1, 1949, aureomycin therapy was discontinued. Two days later the patient had low abdominal pains, chills, fever of 101 F., burning on urination and some testicular pain. He then developed diarrhea. Aureomycin therapy was re-instituted, but during the following week the patient noted development of a tender mass in the left lower quadrant. On August 9 he was readmitted to the University Hospital. A physical examination showed an absence of hepatomegaly, but there was a tender, indurated mass in the left lower quadrant. The spleen was palpable 3 finger breadths below the left costal margin. The bromsulfalein test, thymol tur-

idity and Van den Bergh test were normal. At exploratory laparotomy on August 12, an inflammatory mass could be felt in the mid-sigmoid colon. A biopsy of this mass was made. The patient was discharged as improved on August 19, 1949.

In October, 1949, he again became jaundiced and for a three week period during the following month he had frequent watery stools, ascites and ankle edema.

During the following six months, while receiving aureomycin therapy, the patient was relatively asymptomatic. In April, 1950, his liver was palpable 2 finger breadths below the right costal margin and the spleen was palpable at the level of the umbilicus.



FIG. 1. Barium enema showing downward displacement of the left colic flexure by enlarged spleen

Serum bilirubin concentration was 8.1 mgm. per cent, direct and 5.4 mgm. per cent, indirect; thymol turbidity, 13.4; and bromsulfalein retention in 30 minutes was 58 per cent. On July 4 he began to have abdominal distention. Three days later his scrotum was inflamed, ulcerated and extremely tender. The following day he was readmitted to University hospital. Aureomycin was discontinued as it was believed his scrotal symptoms were a reaction to the antibiotic. Five days later, he had chills, abdominal pain and a fever of 104 F with nausea and vomiting. Intravenous aureomycin therapy promptly controlled his symptoms, but after 5 days of this medication, the scrotal lesion returned. This chain of events was repeated on several occasions. Later the patient developed thrombophlebitis of the right thigh. He had his first abdominal paracentesis on September 25, 1950. Eight thousand cc. of cloudy

yellow fluid was obtained. This fluid contained 2500 red blood cells and 60 white blood cells, 70 per cent of which were lymphocytes. There were 50 large unidentified cells per 100 white blood cells. The specific gravity was 1.006 and protein, 0.57 grams per cent. Throughout this period of hospitalization, the patient was treated with large quantities of intravenous glucose, Hykinone and vitamins. On August 30, 1950 he was discharged as improved.

From that time until his final admission, the patient required abdominal paracenteses every two to three weeks. Each time, approximately fifteen quarts of ascitic fluid were withdrawn. His condition slowly deteriorated and on February 22, 1951, following another episode of chills, abdominal pain, fever, nausea and vomiting he was admitted for the last time.

His body temperature was 100.8 F.; pulse, 102; respirations, 20; and blood pressure, 120 systolic over 80 diastolic. The patient was acutely ill. Icteric skin, numerous telangectasia over the buccal mucous membranes and spider hemangiomas over the arms, upper thorax and neck were observed. The lungs were judged to be normal by percussion and auscultation. The heart was not enlarged. The abdomen was slightly distended. The liver could not be felt. An extremely tender spleen was palpable 5 finger breadths below the left costal margin.

On admission, the patient was treated with intravenous chloromycetin, parenteral vitamins and glucose. Although he improved slightly on this therapy, February 24 he became anuric, developed hiccoughs, marked abdominal distension and periodic vomiting productive of small amounts of mucus. The blood urea nitrogen was 35 mgm. per cent; chlorides, 88 mEq.; and CO_2 , 35 vol. per cent. The following day he became extremely restless and developed Kussmaul breathing. The patient was immediately started on intravenous sodium lactate, but despite this therapy he lapsed into deep coma, which was followed by cyanosis, a rapid drop in blood pressure, and cessation of respirations.

CLINICAL DISCUSSION

Dr. Henry J. Marriott: "Spiders" suggest severe liver damage and are most commonly seen in cirrhosis. They are thought to occur from an excessive estrogen effect resulting from failure of the liver to esterify and so inactivate estrogens. Evidence that they are estrogenic in origin derives from their occurrence in pregnancy and the fact that in some cases of cirrhosis, where, with treatment, liver function has improved and spiders faded. The administration of estrogen has caused the spiders to blossom forth again. As well as cirrhosis and pregnancy, spiders appear in any serious liver disease such as carcinomatosis. They also occur occasionally in small numbers in normal people.

Although dysuria and testicular pain suggest a urinary tract infection, both these symptoms can be associated with such conditions as an inflamed pelvic appendix, a pelvic abscess or some other inflammatory lesion in the pelvis. Diarrhea can also result from these same lesions.

A mass in the left lower quadrant suggests carcinoma of the sigmoid, tuberculosis of the sigmoid, diverticulitic abscess, amebic granuloma of the sigmoid, suppurating lymph nodes infected from leg or perineum, and actinomycosis. Thrombophlebitis

can of course develop in anyone who is stricken with a debilitating, confining disease. But it is worth considering its relatively frequent associations. It is worth remembering what Trousseau said in 1865:

"should you, when in doubt as to the nature of an affection of the stomach; should you, when hesitating between chronic gastritis, simple ulcer and cancer, observe a vein become inflamed in the arm or leg, you may dispel your doubt, and pronounce in a positive manner that there is cancer."

Trousseau went on to say that the association was not confined to gastric malignancy, but that any internal cancer was likely to be complicated by peripheral thrombosis. Recently it has been shown that the most likely site of cancer associated with such peripheral phlebitis and thrombosis is carcinoma of the body and tail of the pancreas. In 1938, Sproul at Presbyterian Hospital, out of 102 cases of arm or leg vein thrombosis, found that 52 were associated with cancer; the next most frequent association was infection with 27; and next was arteriosclerotic heart disease with 10. Breaking down their series another way they found that *over half* of their 16 cases of carcinoma of the body and tail of the pancreas had thrombosis somewhere in the body; next in order of frequency came cancer of liver (27.2 per cent), kidney, ovary, uterus, stomach, duodenum, gallbladder, prostate, head of pancreas, colon and lung (14.8 per cent). Many cases of carcinoma of the body and tail of the pancreas have been reported as presenting with peripheral thromboses as the first symptom. So in this patient the thrombophlebitis may be the first indication of a malignancy; or it may be associated with the infection from which he was clearly suffering; or perhaps with the intravenously administered aureomycin.

With its low specific gravity and protein, the abdominal fluid was obviously a transudate. This favors cirrhotic or carcinomatous ascites, and is against tuberculous peritonitis. The large number of red cells are uncommon except in malignancy involving the peritoneum, though sanguineous transudate may be seen in both tuberculous peritonitis and cirrhosis. The high percentage of lymphocytes is not specific, but is not out of keeping with tuberculosis. The large unidentified cells might well have been malignant cells or just endothelial cells. Rapidly accumulating ascitic fluid is consistent either with malignancy or with advanced portal obstruction.

The impalpable liver suggests that it might well be in the shrinking stage of very advanced cirrhosis. The extreme sensitivity of the spleen suggests that there might have been a recent sudden increase in its size, as from a splenic vein thrombosis or that it has become involved in an acute septic process.

The terminal uremia with acidosis, in which no doubt the blood urea would have given much higher readings but for the overwhelming liver disease, may well represent the hepato-renal syndrome, with dissolution of the liver being accompanied by necrosis of the renal tubules and producing a lower nephron nephrosis.

Summarily, this patient's course was characterized by 7 attacks of jaundice over a 10 year period; progressive hepatic dysfunction and portal obstruction—hepatomegaly, splenomegaly, "spiders," ascites, edema. During the last 2 years his course was complicated by abdominal attacks characterized by lower abdominal pains, chills, fever, nausea, vomiting, diarrhea; on one occasion by the development of dysuria, testicular pain, and a left lower quadrant mass involving the sigmoid; terminal renal

failure and thrombophlebitis of the right thigh on one occasion; the ascitic fluid was a transudate with blood contained in it.

Because of the past history of probable tuberculosis, this disease might be considered first. This disease could account for the sigmoid mass, and could contribute to the ascites and the splenomegaly. But it does not comfortably explain the recurrent attacks of hepatitis, with progressive hepatic failure, which dominate the condition. Response to aureomycin is against this diagnosis.

I notice that there is no mention of white blood count, red blood count, rectal examination, stool examination, urinalysis or proctoscopic examination. Was there any reason for leaving this out?

Dr. T. E. Woodward: I do not know why that was not included in the protocol. This patient was proctoscoped several times, and nothing of significance was found. A few times there was mucus. The white blood count in the early stages was relatively normal, but I should say that during the last year or two the white count was fairly low, around 2 to 3,000. The urinalysis was negative. Repeated stools were examined, but were negative. It should be noted that all of the symptoms rapidly improved with the use of cortisone for the first time. During the 3 or 4 year period all he could do in the way of activity was to get downstairs. He had a period in 1949 when he could walk around but then relapsed. During the second relapse the patient was again given cortisone, but this time it was of no help whatever. The question of the continued jaundice and large liver perplexed everybody. The Gram test could not be done very successfully, but so far as I recall, it was negative. A consultant felt that we should operate and get a piece of liver by biopsy and explore the common bile duct, but after the exploratory laparotomy he had another six months' relapse, probably caused by the inhalation of anesthesia. Realizing that the use of antibiotics might add to the liver difficulty, this course was weighed carefully, but the man was weakening from the diarrhoea and we were forced to give him small doses of aureomycin and chloromycetin, but, of course, he developed a reaction. The paracenteses were done at home. The patient was carefully attended by his wife, his diet was low salt and mercurials, and this detailed care possibly helped a little bit in keeping him free of ascites. The white count in the last year was in the neighborhood of 2,000 to 3,000 with the enlarged spleen.

Dr. Marriott: Did he have a striking anemia?

Dr. Woodward: The anemia was not marked, he received a great deal of protein. He was not an alcoholic.

Dr. M. C. Pincoffs: During this latter period of his course, when he had the repeated attacks of fever, was he running a low grade fever between those sharp attacks?

Dr. Woodward: He had attacks of fever that might have gone on for about five or six days and then resolved.

Dr. Marriott: You said the stools were negative?

Dr. Woodward: Repeatedly negative. He was proctoscoped numerous times and the stools were negative for occult blood.

Dr. John T. Brackin: This is one of the original barium enema examinations and it is dated August 7, 1949. The splenic flexure of the colon is displaced downward, by the large spleen. The visualized parts of the colon are negative. I think the ex-

amination rules out some intraluminal mass in the colon, but not sources of external pressure. The film of the abdomen made August, 1949, exhibits a radiopaque shadow. I do not think it is a kidney stone and it is too low to be a gallstone. It could possibly be a stone in the ureter, but I feel it probably represents a calcified mesenteric lymph node. There is a shadow seen on some of these films in the right upper quadrant which suggests the possibility of air in the biliary tree, and I wonder what surgery was done, or if the gallbladder was anastomosed to the small intestine at the time of the exploration. This film is suggestive of air in the region of the biliary tree. That may occur with gallstone obstruction, where the gallstone has eroded into the small intestine, forming a fistulous communication with the gallbladder and the small intestine. The gallstone may be passed without causing intestinal obstruction. In the examination of March, 1950, I was unable to definitely identify a lesion of the sigmoid colon. This is the first roentgenograph of July, 1950. The lung fields are essentially clear. I suspect that the elevation of the diaphragm at this time was associated with the fluid in the abdomen. Here is another roentgenograph of the right upper quadrant which suggests the possibility of air in the biliary tree.

Senior Student: I have a question about the degree of splenomegaly which can be associated with cirrhosis. Does the spleen enlarge to any particular size?

Dr. Marriott: Five finger breadths is usually described as moderately enlarged.

Dr. Spencer: I have seen spleens weighing 400 or 500 grams associated with cirrhosis, and some exceeding 1,500 grams.

Dr. M. C. Pincoffs: I am impressed by the recurrent inflammatory process. Persistent infection in the liver with progressive change is usually caused by streptococcus viridans. Cases have been described of recurrent phlebitis in the portal system with involvement of the portal vein in the liver. They are rare. Somehow, one wonders whether the latter part of this course was not associated with infection either of the cholangitic or endophlebitic type in the portal system.

Dr. Marriott: Suppose the original attack of jaundice was not acute infectious hepatitis. Suppose it was missed amebic hepatitis. Then could the whole condition be explained on the basis of a progressive hepatic amebiasis producing increasing hepatic dysfunction and portal obstruction, with an amebic granuloma of the sigmoid developing later in the course? I don't know much about amebiasis, but it certainly doesn't appeal to me as a likely diagnosis. I am fortified in this by Dr. Woodward's data, although negative stools for amebae and cysts does not by any means conclusively rule out the diagnosis of amebiasis.

Another diagnosis which must be considered in the light of what Dr. Woodward has told us is a Banti type of syndrome. The patient apparently had a leukopenia with his splenomegaly, and of course cirrhosis is always seen eventually as part of the condition. He did not have a significant anemia, however, and this syndrome would not account for the beginning of this man's illness—the recurrent attacks of jaundice.

In any young person suffering from recurrent attacks of jaundice and splenomegaly, you have to let familial hemolytic icterus cross your mind. This young man clearly did not have hemolytic jaundice on the occasions that we are given data. But we have to remember that pigment stones are likely to form in this disease, and these, like

any other stones, can lead to attacks of obstructive jaundice. However, I think it would be going too far to be asked to diagnose hemolytic icterus in the complete absence of hematologic data, for which this protocol is conspicuous.

Could a stealthy malignancy have crept into the general aspects? Could the cirrhotic liver have developed a hepatoma? We know that cirrhotic livers develop this disease fifty times as often as normal organs. Could a coincident malignancy have developed in the sigmoid and metastasized to the already ailing liver? Either of these cancers could lead to peritoneal involvement with bloody ascites. Suggestive, but by no means specific of cancer, we have the thrombophlebitis, the red cells in the ascitic fluid and the rapid reaccumulation of the ascites after tap. Against it we have the duration of intestinal symptoms. We would expect them to be more progressive, leading to obstruction (for the feces are solid in the sigmoid) long before he died.

If the original attack of hepatitis was true "infectious hepatitis," this might well have led on to a chronic or recurrent type of hepatitis which in turn can end up in a form of cirrhosis. This condition of chronic relapsing hepatitis appears to produce a pathologic pattern somewhat different from classic portal cirrhosis; it has been termed "post-hepatic" or "post-necrotic" cirrhosis. It seems to me not unlikely that this is the situation here.

Then we must explain the abdominal attacks and sigmoid mass. Well, any cirrhotic is more susceptible to infection and it is possible that this patient developed a non-specific diverticulitis followed by abscess formation. It is also possible that the intestinal lesion was tuberculous—though the mass seems to have appeared rather abruptly—for cirrhotics are much more susceptible to tuberculosis than normal persons. Active tuberculosis often unsuspected, is found more frequently in patients dying of cirrhosis than of any other disease. Other conditions causing hepato-splenomegaly, which I have considered and dismissed, include amyloidosis; reticuloendotheliosis; Whipple's disease (there was no steatorrhea); and Chiari's disease. This consists of thrombosis in the hepatic veins leading to great enlargement of the liver and spleen. It sometimes accompanied cirrhosis and cannot be excluded here though it is obviously not the primary liver affection.

And so, in summary, I am forced to the conclusion that the sigmoid lesion is undiagnosable. The most likely possibilities seem to be a non-specific diverticulitic abscess, or a tuberculous granuloma. The liver is probably the seat of a post-hepatic cirrhosis. In an attempt to account for all the symptoms at the end I think we may find a thrombus in the splenic vein, and probably necrosis of the renal tubules exemplifying the hepato-renal syndrome.

PATHOLOGICAL DISCUSSION

Dr. H. R. Spencer: This person, during his long illness, had been admitted to hospitals on a number of occasions. In September, 1948, while a patient in a V. A. hospital, he underwent an exploratory laparotomy. The liver at that time was described as enlarged and scarred. The spleen too was large. The biopsy specimen taken from the liver was reported as showing "infiltration of the portal areas with 'neutrophils,' lymphocytes and 'eosinophils.' There was a slight diffuse scarring and some proliferation of bile ducts."

In August, 1949, while the patient was in this hospital, a second exploratory laparotomy was done. At operation, "an inflammatory mass could be felt in the mid-sigmoid colon. This mass was adherent to the anterior abdominal wall and the omentum was bound to it." A biopsy was taken from the abdominal wall in this area. Sections showed a subacute inflammatory process. In the appendix, no significant changes were found.

At autopsy, a slight icterus of the skin and sclerae was noted. The abdomen was distended. Numerous old and recent paracentesis wounds and laparotomy scars were seen. The peritoneal cavity contained about 5,000 cc. of fluid in which there were fibrin flocculi. The abdominal lymph nodes were enlarged. The terminal ileum and cecum were bound to the parietal abdominal wall by fibrous adhesions. The ileum was angulated, but not obstructed. The spleen weighed 1,500 grams, was congested, and was dark red in color. The liver was adherent to the diaphragm. It weighed 1,500 grams. The organ was grossly distorted and the surface was quite nodular. Grooves and fissures separated the nodules. The liver cut with distinct resistance. Its formation was distorted and the parenchyma was divided into greenish yellow nodules which were separated one from another by bands of fibrous tissue. In histologic sections, the hepatic parenchyma was divided into small and large pseudolobules which had little relationship to triads or central veins. Some of the liver cells showed active regeneration while others appeared necrotic. Bile was noted in many canaliculi and the Kupffer's cells contained bile pigment. The scar tissue between the pseudolobules contained many lymphocytes, a moderate number of leukocytes and numerous small bile ducts.

This was recorded as a case of subacute and chronic virus hepatitis.

Hepatitis in most instances is a mild disease which apparently leaves no residual changes in the liver. In other instances the disease is fulminating with rapid and extensive destruction of liver tissue. Other cases are characterized by recurrent liver damage with necrosis, regeneration and ultimate cirrhosis.

ANATOMIC DIAGNOSIS

Recurrent hepatitis with cirrhosis; splenomegaly; icterus; ascites; hydrothorax, bilateral; peritoneal adhesions, old; angulation of ileum; pulmonary congestion and edema; absence of appendix; calcified lymph node, and mesentery of terminal ileum.

OBSTETRICAL CASE REPORT*

Recently there was admitted to the University Hospital a 17 year old primigravida, near term and having convulsions typical of eclampsia. These were very frequent and her blood pressure on admission was 188/122 mm. Hg. Shortly after admission and before treatment could be instituted, the patient expired. Autopsy revealed the typical pathology of eclampsia, plus a large cerebral hemorrhage.

The history, obtained from the family and from her physician, was pertinent in several features. She first reported for prenatal care when about 3 months pregnant and was seen thereafter at monthly intervals. Her doctor reported that she was most faithful in keeping her appointments. Prenatal course was reported as normal, the only unusual finding being a slight increase in weight gain upon the occasion of her last visit, 21 days before admission to the hospital. At this time there was no apparent edema and the blood pressure and urine were normal. No treatment was given and the patient was advised to report in another month. About 10 days after this she began to have rather constant frontal headaches and pedal edema. She called her physician who advised an analgesic and limitation of activity, but did not feel it necessary to see her. The condition grew worse and 4 days after the first telephone call she called her doctor again and received the same advice. On the morning of the day of admission convulsions began and she was referred to the hospital.

Question: Is this to be considered as a preventable death, and if so where should the blame be placed?

Comment: Without question this is definitely a death which should not have occurred and the blame rests directly upon the shoulders of the attending physician.

a—Prenatal visits may be one month apart in the early months of normal pregnancy without undue risk, but as pregnancy advances, the intervals must be shortened to 2 weeks and in the last 5 to 6 weeks to 1 week.

b—Most physicians today restrict the salt intake during the last half of pregnancy as a prophylactic measure. It was not done in this case.

c—A sudden weight gain in the last trimester of pregnancy is frequently the earliest sign of a developing toxemia and should always be regarded as such. Even though no treatment is advised, it is a warning sign which *must not* be disregarded and the patient should be kept under very close observation from this time until termination of the pregnancy. She should be placed on a very low salt diet, given increased rest and particular attention paid to the various eliminative tracts. If symptoms and signs become worse or even if they do not improve the patient should be hospitalized promptly, where more intensive therapy can be carried out, including termination of the pregnancy when indicated. With this regime carefully carried out and with the full cooperation of the patient, eclampsia should cease to exist.

d—The continued headaches and edema are most suggestive of a developing pre-eclampsia and it is difficult to understand why these were so completely ignored. A simple urinalysis and blood pressure recording would undoubtedly have given a diagnosis and warned of the impending disaster.

No one is so blind as he who does not want to see.

* From the Dept. of Obstetrics, University of Med. School of Medicine, Baltimore.

BOOK REVIEWS

Clinical Orthoptic Procedures. WILLIAM SMITH, O.S., Associate Instructor in Optometry and Instructor of Orthoptic and Visual Training, Massachusetts School of Optometry, Boston, Mass. The C. V. Mosby Company, St. Louis, Missouri, 1950, 393 pp., 70 illustrations. Price \$8.00.

The author in his coverage of orthoptic, anatomic and physiologic principles differs materially from the accepted principles and practices of medical orthoptists and ophthalmologists. The text, however, is evidently intended for the guidance of optometrists and the procedures discussed are evidently acceptable from their point of view. I must, therefore, conclude that this book is of interest only to those in the teaching and practice of optometry.

F. Edwin Knowles, Jr., M.D.

Hospital Staff and Office Manual. T. M. LARKOWSKI, M.D., F.A.C.S., Professor of Clinical Surgery, Stritch School of Medicine, Loyola University, Chicago, Ill. and A. R. ROSANOVA, R.Ph., M.D., Clinical Instructor, University of Illinois Medical School, Chicago, Ill. Romaine Pierson Publishers, Inc., Great Neck, New York, 1951.

The underlying purpose of this manual is to close the gap between the theoretical teachings in medical school and the actual practice of medicine, with all its specialties. This four hundred and thirteen page effort to produce a "pocket edition" of medicine sacrifices everything. In general, the subject matter is handled with such brevity and abruptness that it is rendered practically useless to all intent and purpose.

The book is not impressive, in either organization or content, and it is far too sketchy for practicing physicians. Similar shortcomings make it less desirable than other obtainable manuals for interns and medical students.

John Hightower, M.D.

The Pharmacologic Principles of Medical Practice. J. C. KRANTZ, Professor of Pharmacology, School of Medicine, University of Maryland; and C. J. CARR, Associate Professor of Pharmacology, School of Medicine, University of Maryland. 1152 pages, illustrated. Baltimore, Maryland; The Williams & Wilkins Co., 1951, Price \$10.00.

This Second Edition of Drs. Krantz and Carr's book has been revised to include the recent rapid advances in pharmacologic knowledge. The purpose of the authors is to present the pharmacodynamic and pharmacotherapeutic actions of drugs as they are applied in the treatment of disease. New chapters on the chemotherapy of tuberculosis, the chemotherapy of rickettsial diseases, the anti-motion sickness drugs, and the treatment of the arthritides; the adrenal corticotropic hormone and cortisone, have been added. Changes made necessary by additions and deletions in the 14th Revision of the U. S. Pharmacopeia, in the 9th Edition of the National Formulary and the 1950 N.N.R. have been made to keep this text completely modern. New tables and illustrations have been added, and with the fourteen portraits of outstanding investigators in the field, make this book extremely interesting.

Especially valuable are the chapters *The Nature and Source of Drugs*, *Methods of Drug Administration and Function Which Modify Dosage* and the appendix on *The Discovery and Evaluation of New Drugs*.

To the many former students of Dr. Krantz this textbook will prove to be especially interesting. Many of the approaches to the teaching of pharmacology will be recognized with pleasure.

Dr. E. Roderick Shipley, M.D.

MEDICAL SCHOOL SECTION

PSYCHIATRIC HOSPITAL TO OPEN

Now nearing completion, the new psychiatric institute of the School of Medicine will open sometime between November 15 and December 15, of 1952, according to Dr. Jacob Finesinger, Professor of Psychiatry.

The new unit, built at a cost of nearly 3 million dollars, embodies the most modern concepts of hospital facilities for the treatment of the mentally ill, as well as a thoroughly planned group of research facilities which are interwoven with the facilities for the care of in-patients and out-patients.

The six story building is divided in the middle by a central utility area which opens on to two parallel corridors, giving all of the area for the treatment of patients an outside view. Stair wells are included in this central area.

The ground, first and second floors are largely for out-patient care. The ground floor contains a large occupational therapy workshop, a large playroom and two specially designed treatment rooms for therapy with children. A small attractive outdoor terrace is also provided for children. The first and second floors of the building contain attractive admitting offices, staff conference rooms and offices. There is a large out-door recreational area for adult patients opening directly from the first floor. In the staff area, a completely equipped work library, an auditorium seating an entire medical school class and several smaller classrooms are provided. Clinical and research laboratories are located on one floor of the wing connecting the new Institute with the University Hospital. The physio-therapy unit and the electro-encephalographic station are housed on the third floor of the connecting wing. On the lower three floors of the Institute building there are four units consisting of observation rooms alternating with treatment rooms. The observation rooms are provided with one-way windows for the direct observation of psychotherapy in process. Facilities are available in 24 offices for the automatic recording of interviews for teaching and study. Twenty-three additional offices are available for therapeutic work with patients.

The upper three floors are exclusively for the treatment of patients and are virtually identical. Each floor is divided by a central partition into two main wings, each of which can in turn be isolated by closing the doors in the central service area. One floor, for disturbed patients, is completely sound-proofed and air-conditioned. On the roof of the building is an attractive recreation area and a large auditorium which will seat approximately three to four hundred people. Ultimately, the building will house 102 patients, 60 disturbed patients, with 14 to 16 children, the remainder being for patients with psychoneurotic or psychosomatic illness!

Innovations or departures from traditional psychiatric institutions include the complete absence of grills or bars, air-conditioning, attractive wall and ceiling decorations, complete sound-proofing, and standard plumbing fixtures.

A unique system for the recording and transmitting of interviews is provided throughout the entire institute. Each room is outfitted with a microphone, a speaker, and an input jack for recording equipment. Recordings may be made locally or may be transmitted to a central recording room. In addition, the nurse at each floor sta-

tion, by way of the microphonic equipment, can listen or record from any room or any area. In other words, each room is a separate recording unit and can be so adjusted that recordings may be made automatically whenever the noise level rises above a pre-determined point. Recordings made in a central room may be automatically activated by relays, and recordings can be made from a single or a number of rooms simultaneously. Conversely, the entire building is wired for the transmission of any one of four radio programs, for announcements, or for the playing of recordings. These programs can be channeled to all rooms or to any single room as desired.

In the same area where the recording-transmission panel is located, there is installed for research purposes, a "quiet" room, air-conditioned and completely shielded, this room to be ultimately used for physiologic studies.

When in full operation, the institute will require the services of 13 assistant residents and 2 residents. Aside from the in-patient care, there will be facilities for the routine out-patient care for a large number of patients, and according to Dr. Finesinger, a number of important research projects are awaiting the opening of the institution.

The formal opening of the new unit will take place on Monday, Tuesday and Wednesday, November 17th, 18th and 19th. The official exercises are to include a program of scientific papers and panel discussions on topics along the lines of the department activities. A special announcement of the formal opening with a complete program will be sent to the members of the Alumni Association and the subscribers of the Bulletin.

DEPARTMENT OF PHARMACOLOGY

The Department of Pharmacology has recently received grants in aid for the year 1952-53 as follows.

U. S. Public Health Service, National Heart Institute.....	\$5,500
Brayten Pharmaceutical Company.....	\$2,500
Ohio Chemical and Surgical Equipment Company.....	\$4,500
Emerson Drug Company.....	\$2,500

DR. CHARLES BAGLEY, JR. RETIRES

With the completion of 21 years as Professor of Neurologic Surgery during which time he initiated and saw completed many developments in this particular field, Dr. Charles Bagley, Jr., Professor of Neurologic Surgery has retired officially on his 70th birthday, April 3, 1952.

His career as the first neurosurgeon at the School of Medicine is indeed an active one and has been associated with many innovations and with much progress.

Dr. Bagley, a member of the class of 1904, returned to his Alma Mater in 1931 to become the first Professor of Neurologic Surgery. Following his graduation from the School of Medicine he became resident physician at the Sinai (then Hebrew) Hospital in Baltimore during the year 1906. At this time he became interested in the work of Dr. Harvey Cushing who was then at the Johns Hopkins Hospital. In the Fall of 1912 he joined Dr. Cushing's staff at the Peter Bent Brigham Hospital in Boston where he became the first Resident in Neurosurgery. Returning to Balti-

more the next year he became a Fellow in Neurology at the Phipps Psychiatric Institute and Associate in Experimental Neurology.

With the advent of World War I he was commissioned a first lieutenant in the Medical Corps and on August 24, 1917 was called to active duty with the Division of Surgery of the Head (Neurosurgery). At this time the Council of National Defense also named him a member of the Committee on Ophthalmology of the General



DR. CHARLES BAGLEY, JR.

Medical Board. After a period of duty overseas he returned to this country with the rank of Major and was stationed at the Army Hospital at Fort McHenry. He was discharged in October, 1919. From 1919 until his appointment as Professor of Neurologic Surgery he became increasingly interested in the practice of this specialty and ultimately devoted his entire time to it. One must remember that in the 20's neurologic surgery was not as clearly defined a specialty as it is today. It was to this further clarification of neurologic surgery as a specialty that Dr. Bagley gave so much of his time, enthusiasm, and attention.

Following his appointment at the School of Medicine he immediately saw the necessity for the sound pathologic laboratory studies to support the clinical and surgical practice of neurosurgery. In 1931, with the cooperation of Dr. Hugh R. Spencer, he established the neuropathologic laboratory and shortly thereafter appointed Dr. James G. Arnold, Jr. as the first neuropathologist in charge of this work.

Dr. Bagley then began to organize the neurosurgical service at the University Hospital and, in collaboration with Dr. Richard G. Coblenz and later Dr. James G. Arnold, Jr., formed the first team for the practice of neurosurgery at the University Hospital. By 1936 the demands of the service had grown to the point where a residency program was considered. From 1936 until 1940 the service enjoyed a single resident, in 1940 the service being expanded to require the duties of assistant residents and other personnel. Under Dr. Bagley's supervision the amount of neurologic surgery grew to a point where services at the Baltimore City Hospitals and the Mercy Hospital were included in the training program. In addition, an active out-patient department was established. To Dr. Bagley goes full credit for the establishment of neurosurgical research at the School of Medicine. Under his supervision the first electroencephalographic station was installed. This and separate facilities for pneumoencephalography were instituted under his supervision by donations from the Hoffberger Neurosurgical Fund, an annual sum donated to the School of Medicine and the Department of Neurologic Surgery by the Hoffberger Foundation of Baltimore. Largely through his activities, additional funds were secured for research from other donors.

Long interested in the teaching of medical students, his interests very frequently centered on active clinics and the production of carefully edited notes which were distributed by the department to the students.

Dr. Bagley's own investigative efforts include the publication of more than 20 scientific papers, a number of which have been very frequently quoted. For a number of years he was the Editor of the Section on Neurosurgery and Brain Abscess in Christopher's Textbook of Medicine. He also contributed several monographs to a military medical series published during World War II.

Among the better known of Dr. Bagley's contributions is his paper "Blood in the Cerebral Spinal Fluid" published in the Archives of Surgery in 1928. It was in this paper that he called particular attention to the significance of xanthochromia. Dr. Bagley was also a pioneer in the development of techniques in the treatment of brain abscess using the electrosurgical unit.

From a very small beginning as an individual, appointed professor in a new and heretofore unknown specialty, by a continuous application of enthusiasm, study, foresight, vigor, and the continuous drive which has characterized the man, there has emerged a full-fledged department enjoying American Board approval, a respected increment of the School of Medicine and another valuable addition to the management of diseases of the nervous system.

As expected, Dr. Bagley has not retired from the practice of neurologic surgery. With a vigor nonetheless changed by the passage of years he continues his active practice and is still active on the staff of the University Hospital.

As a fitting memorial and tribute to the man and to his many years of active service

on behalf of the School of Medicine, the Faculty of the School of Medicine will honor Dr. Bagley at a dinner to be held at the Park Plaza Hotel on December 4, 1952.

COLLEGE-SPONSORED COURSE HERE

A course, Recent Advances in Internal Medicine, will be offered by the American College of Physicians at the Johns Hopkins Hospital and the University Hospital on December 8-13, 1952. The symposium which is under the direction of Drs. Pincoffs and Harvery includes a number of the members of the Staff of the School of Medicine. The symposium, will include sections on infectious diseases, hematology, the nervous system, endocrine and metabolic disorders, and cardiovascular and pulmonary diseases.

MERCY HOSPITAL SECTION

MEDICAL RECORDS DEPARTMENT

On August 26, 1952, the Medical Records Department moved to its new location in a suite of eight rooms on the fifth floor of Mercy. The recently reorganized department now includes office space for the Chief Residents, and offices for the various departmental functions such as medical statistics; surgical dictation; insurance; abstracts; and other medical information; indexes of diseases and operations; a file room for current and microfilmed records; a conference room for seminars and Medical Record Committee meetings; and a dictating room for discharge summaries.

The Medical Record Committee of Mercy includes Dr. James W. Nelson, Chairman, Dr. Sol Smith, Dr. William A. Dodd, and Dr. Clyde D. Thomas, Chief Resident.

The Medical Records Department is now staffed by a personnel of ten including two Registered Record Librarians, and is equipped to facilitate the securing, using, and preserving of medical records. Assistance is offered to doctors desiring to do research by the Medical Statistician, Mr. L. Omer Huesman. It is the aim of the Medical Records Department to function as a service unit for the benefit of the patient, the doctor, the community and the hospital.

DR. WARNER NEW CHIEF OF PATHOLOGY

Dr. C. Gardner Warner, Associate Professor of Pathology in the School of Medicine and recently Pathologist at the Baltimore City Hospitals, became Chief of Pathology at Mercy Hospital on September 1, 1952. Dr. Warner who will serve on a full-time basis, substituted for Dr. Walter C. Merkel during the war years as part-time pathologist. Dr. Merkel has tendered his resignation and will devote full time to the practice of Pathology at the Union Memorial Hospital.

NEW INSTRUCTOR IN SURGERY

Replacing Dr. F. Ford Loker as part-time Instructor in Surgery for the medical students in the Mercy Hospital Section, is Dr. Patrick Phelan, Jr. Dr. Phelan, who is Associate in Surgery on the Faculty of Medicine, is an Assistant Surgeon on the Visiting Staff.

GRANT ACKNOWLEDGED

Mercy Hospital recently received an anonymous fund to establish a fellowship in Anticoagulant Therapy and Allied Subjects, and to obtain needed equipment for the anticoagulant laboratory.

RESIDENT STAFF NEWS

There are several additions to the Resident Staff. A new Resident in Obstetrics is Dr. Milagros Correa. Dr. Correa is a graduate of the University of Santo Tomas, Manila, Philippines, 1949, and she has had previous hospital training in Obstetrics. Also from the Philippines and a graduate of the same University, is Dr. Victoria Palarca, who serves as a straight intern in Medicine. Two new interns are Dr. Joseph Michels, a graduate of the University of Pennsylvania, and Dr. Alfredo Barcenas from Bogota, Colombia, who will intern in Pediatrics.

ARMED FORCES SECTION

Dr. Frederick J. Heldrich, Jr., Resident Pediatrician at Mercy Hospital in 1951-52, left his practice in September for service in the U. S. Air Force. Dr. Rennert M. Smelser, associated with Mercy on the Surgical Resident Staff from 1948-1951, is now stationed at Barksdale Air Force Base, Shreveport, Louisiana.

AUXILIARY NEWS

The Women's Auxiliary of Mercy Hospital held their fall benefit, "Mercy Fiesta" on Friday evening, October 3, 1952, at the Alcazar. Mrs. Francis W. Gillis was General Chairman of the affair, and Mrs. John J. Erwin, Co-Chairman. Proceeds from the Benefit will be used for the new structure completed in the courtyard at Mercy Hospital which will house the central admitting office, three examination rooms, three business offices, personnel office, an office for the volunteer service workers, and a dining room for the house staff.

DOUGTRICIANS

On June 4, 1952, the fourth annual meeting of The Dougtricians was held at the University Hospital and Southern Hotel. This organization is composed of residents in obstetrics who have served under Dr. Louis H. Douglass both at the University Hospital and the Baltimore City Hospitals. There were twenty five members present at the meeting over which the President, Dr. J. Morris Reese, presided. The following papers composed the scientific program:

1—"Sterility Studies in Private Practice"

Dr. J. Tyler Baker, Easton, Maryland

2—"Management of the Occiput Posterior"

Dr. Chas. L. Goodhand, Parkersburg, W. Va.

3—"Deliberate Fourth Degree Episiotomy"

Dr. Arthur Baptisti, Hagerstown, Md.

4—"The Use of Anti-hypertensive Drugs in Toxemias"

Dr. Schuyler G. Kohl, Brooklyn, N. Y.

5—"Maternal Mortality in Baltimore"

Dr. George H. Davis, Baltimore, Md.

6—"Repair of Obstetrical Soft Tissue Damage"

Dr. Louis H. Douglass, Baltimore, Md.

The dinner meeting was addressed by Dr. Richard Weigle, President of St. Johns College, Annapolis, Maryland, whose subject was "The History and Aims of St. Johns College".

DEPARTMENT OF OBSTETRICS

Dr. D. Frank Kaltreider, Associate Professor of Obstetrics, presented a paper on April 1, 1952 at the Congress on Obstetrics and Gynecology in Cincinnati, entitled The Contracted Pelvis.

Dr. Louis H. Douglass presided as Chairman of the Section on Obstetrics and Gynecology at the Annual Meeting of the American Medical Association and presented a paper, The Repair of Obstetrical Soft Tissue Damage.

Dr. George H. Davis, Instructor in Obstetrics and Chief of the Division of Maternity Hygiene, Baltimore City Health Department, presented a paper at the annual meeting of the American Medical Association entitled A Fifteen Year Study of Maternal Mortality in Baltimore.

Dr. Louis H. Douglass presented a paper at the annual meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons at Hot Springs, Virginia, the title of which was Trial Forceps.

TELEVISION PROGRAM TIME CHANGE

Beginning with the program on September 30, 1952, the weekly telecast "Live and Help Live" presented by the School of Medicine and the other Baltimore Schools of the University through station WBAL-TV (Channel 11) has been changed, beginning $1\frac{1}{2}$ hour earlier, the program now being scheduled from 9:30 to 10 P.M.

DEPARTMENT OF DERMATOLOGY

Dr. Francis A. Ellis of the department of dermatology will present an exhibit on "Dyskeratoses" at the annual meeting of the Southern Medical Association in Miami, Florida on November 11, 1952.

Dr. Harry M. Robinson, Jr. will read a paper on "Terramycin and the Treatment of Dermatoses, A Study of 1200 Patients".

Drs. Ellis and Robinson will also participate in the annual meeting of the American Academy of Dermatology to be held in Chicago during December, 1952.

The exhibits displayed by the Department of Dermatology at the International Congress of Dermatology held in London during the summer of 1952, have become a part of the permanent exhibit on dermatology at the St. John's Hospital of the University of London.

POST GRADUATE COMMITTEE SECTION

POST GRADUATE COMMITTEE, SCHOOL OF MEDICINE

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Post Graduate Office: Room 600

29 South Greene Street

Baltimore 1, Maryland

Horatio Alger Success Story

The oft quoted phrase "the mighty oak from little acorns grow" could find no finer exemplification than in the program "Live and Help Live" broadcast over television station WBAL each Tuesday evening. In previous issues of the BULLETIN, we have in fragmentary fashion told the story of its development.

We know that not all have read these brief reports, and we think that the amazing and ever mounting public acceptance of these presentations demands that the story of their development be told more fully. As is the case with so many things, the inception of these telecasts was most modest and in nowise foreshadowed the scope and influence that they would attain so rapidly.

In the fall of 1951, Dr. John C. Krantz, Jr., of the Faculty of this Medical School had occasion to be in the Television Studios of Station WBAL to participate in a telecast. Anne Holland, Producer of "Live and Help Live" discussed with Dr. Krantz that evening the possibility that the University of Maryland Professional Schools might present a series of television programs over that station. Mrs. Holland was convinced that such a series would have great public service value in educating the lay public in phases of professional subjects that would be of interest and practical importance to them.

Dr. Krantz immediately saw the tremendous possibilities that the suggestion offered, and, with his usual energy and enthusiasm, took steps to secure the co-operation of certain members of the teaching staffs of the Baltimore Schools.

On December 11, 1951, the first broadcast was given from 10:30 to 11:00 P.M. by Dr. Jacob E. Finesinger. It seemed to those interested that this was a highly successful effort and immediately other programs were arranged by Dr. Krantz and Mrs. Holland.

Soon Dr. Krantz realized that this was a larger effort than originally it was thought to be. Consequently, in February, 1952, he brought the matter before the Faculty Advisory Board of the Medical School and, after considerable discussion, it was decided to appoint a Television Committee. Dr. H. Boyd Wylie appointed Doctors Frank H. J. Figge, Jacob E. Finesinger, John C. Krantz, Jr., John A. Wagner, and Mr. George H. Buck with Dr. Howard M. Bubert as Chairman. This Committee met early in March and made certain recommendations to the Faculty Advisory Board which acted favorably upon the report. The major recommendation was that the



Dr. John C. Krantz, Jr., Professor of Pharmacology, University of Maryland; Mr. D. L. Provost, Vice-President and General Manager for radio and TV, Hearst Corporation; and Mrs. Anne Holland, Producer of "Live and Help Live".



President of the University of Maryland and the Deans of the Baltimore Professional Schools

The Deans are listed as follows: Dean H. Boyd Wylie, School of Medicine; Dean Noel E. Foss, School of Pharmacy; Dean Florence Geipe, School of Nursing; President Byrd; Mr. George Buck, Director of the University Hospital; Dean Roger Howell, School of Law; and Dean J. Ben Robinson, School of Dentistry.

television activities be put under the Postgraduate Committee of the Medical School, and the Postgraduate Committee accepted the responsibility. The Chairman of the Postgraduate Committee referred all matters of programming to the Audiovisual Subcommittee of which Dr. John Krantz is Chairman, and includes among its members Mr. George H. Buck, Vice-Chairman Doctors Frank H. J. Figge, Jacob E. Finesinger, Louis A. M. Krause, and Mr. Carl D. Clarke and since that time, Dr. Krantz's Committee has been solely responsible for the programs which have been given.

Early in its history, it was realized that in spite of the tremendous public acceptance which it had received, the programs were somewhat amateurish. Mr. D. L. Provost, Vice-President and General Manager for Radio and Television of the Hearst Corporation has shown remarkable and most encouraging interest since the starting of this series and, as an evidence of his concern, made available to Mrs. Holland and to this series of programs, the services of certain of the Station Staff, notably, Mr. George Mance, Assistant Producer, who became largely responsible for production and Mr. Ted Clark, Art Director. Certainly, we must all agree that the program has been influenced most favorably as a result of these added efforts.

Some months ago, the Catholic Review printed a flattering but justly critical statement regarding the University of Maryland television series. We believe that the criticisms contained therein are less applicable now than when the article was published, and it is our sincere hope that even more will be accomplished as time goes on.

One of the most interesting phases of this work has been the proof that the listening public has appreciated the efforts of the University and of Station WBAL as evidenced by the results of popularity testing that has been done. These methods are highly technical and no effort will be made to explain their operation here. Suffice to say that it is now estimated that 25,000 television sets are "tuned in" on the University Program and that each of these are watched by at least four viewers resulting in an audience of some hundred thousand persons.

The record has been phenomenal and during the month of August, when listener and viewer interest is at its lowest ebb, this program received a very high public acceptance rating—actually exceeding a popular children's program and a popular program in which public figures are interviewed. Certainly, everyone involved—Mr. Provost, Mrs. Holland, Dr. Krantz, Mr. George Buck,—and all those active in the work, both at Station WBAL and the University of Maryland Professional Schools, deserve the congratulations and continued assistance of all of us. The unfailing support of Dean H. Boyd Wylie and the great helpfulness of President H. C. Byrd must likewise be acknowledged as they have made the series possible.

The response upon the part of the men working in the Professional Schools in Baltimore has been most gratifying and, as long as we can receive such splendid cooperation and as long as the Station can continue its fine contribution, this worthwhile service to the people of the State will continue and flourish.

Obviously, our appraisal of the success of these programs is prejudiced. Consequently, when one reads in *Variety*, probably the least gullible of periodicals devoted to "show business".

"This series of half-hour public service airings in cooperation with the University of Maryland, has built a big following on its down-to-earth

discussions of medical problems as it affects the laymen and professional as well. Utilizing outstanding figures in the medical, dental and pharmaceutical life of Baltimore, plus additional personnel and patients from the University Hospital and its clinics a wide variety of subjects has been covered.

Current discussion of allergies, hay fever, etc., with actual projection of skin reactions, made for a clear-cut understanding of this subject and previous airings of such problems as heart attacks, dental malformations, and difficulties with hearing and seeing should help clarify popular misconceptions about these problems and serve to alleviate fear and terror.

It's all down to earth and smartly broken up by pictures, charts and in many cases, by actual people shown before, during and after their problems have been clearly defined. Medicos and lecturers are switched around and kept fairly brief. Not all of these are telegenic or paragons of crisp, clear and unfrightened speech, but they come through on the average and everybody likes to hear about their operations or pet ailments. This show tells it. There's good pacing by Ann Holland, who also organizes the weekly setup.

Burm."

We sincerely trust that all of our readers will make this program a habit and that they will be sure to tune in each Tuesday evening on, "Live and Help Live".

TELEVISION PROGRAM

Nov.	4	Election night—no telecast	
	11	Dr. Dietrich C. Smith.....	Blood Pressure
	18	Dr. Jacob E. Finesinger.....	The Psychiatric Institute, University of Maryland
	25	Dr. Louis H. Douglass.....	Caesarean Section
Dec.	2	The Hon. H. J. Anslinger and Dr. John C. Krantz, Jr.....	Narcotics
	9	Dr. Amedeo S. Marrazzi.....	Neuropharmacology
	16	Dr. Monte Edwards.....	Diagnosis of Diseases of the Rectum and Colon
	23	No University Telecast	
	30	No University Telecast	
Jan.	6	Dr. W. Houston Toulson.....	Cancer of the Prostate Gland
	13	Dr. Noel E. Foss.....	Story of the Cascara Drug
	20	Dr. George H. Yeager.....	Peripheral Vascular Disease
	27	Dr. Robert E. Bauer.....	Radioactive Isotopes in Clinical Medicine

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The names listed above are officers for the term beginning July 1, 1952 and ending June 30, 1953.

PRESIDENT'S LETTER

Dear Alumnus,

Turk Adams, more than any other man, is responsible for inflicting your current president upon you. I have cursed him since April, when I wasn't cursing myself for being soft headed enough to be persuaded to accept a job I well knew I was not fitted for. Had I known I was obligated to produce four "President's Letters", Turk would have been woefully deficient in persuasive power. But here I am—If you will put up with me, I promise to do my humble best.



DR. JAMES T. MARSH

Each one of us owe the University of Maryland School of Medicine a debt we can not pay. All of us paid in full the bills presented by the office, but we did not begin to adequately compensate the school for the tangible and intangible benefits we received. The school needs our support if she is to continue her invaluable contribution to the everlasting battle against ill-health and disease. All of us should, and many want to, do our bit toward perpetuating the influence of the school to whom we

owe so much. I do not know what the Alumni Association should try to do; I do not know what is expected of the President of the Alumni Association, but I will welcome constructive suggestions from all of you at anytime. I promise that your officers will seriously consider your suggestions and put into concrete action as many of them as their time, ability and considered judgment makes possible.

It is suggested that every Alumnus do all he can by influence and at the polls to return to the Halls of Congress those who have voted against bills providing for curtailment of the freedom of American people to manage their own health and its problems. We should try to replace, when possible, those men who favored such bills with new members of the Congress who do not believe in an Uncle Sam who is a mixture of Santa Claus and Stalin.

We all know there are those in high places who seem to be dedicated to the business of making the federal government dictator over all groups concerned with the nation's health. Voting against bills introduced into Congress which directly, or through devious indirection, were designed to make the health of America the business of a federal bureaucrat, was unpopular with certain elements of our government. We can be sure life was made as difficult as was politically expedient for the men who stood by their convictions and voted against such vicious legislation. Each of us, who believes that medical care in these United States is much better under the existing system than it could possibly be under control of Federal Government, with bureaucratic inefficiency and waste of men and money, owes a debt of gratitude to those men who voted for our convictions.

Whatever our political complexion may be, the time for voting party tickets has long since past. It is high time for us to support, by influence and vote, men whose philosophy of life and philosophy of government corresponds to our own philosophies. Between now and November 4th we can do much to show our gratitude to those men, running for seats in either house of Congress, who are responsible for our continued freedom to practice medicine according to our conscience and in the way which has made America a world leader in medicine and other health problems. At the same time we should do our utmost to replace the men who favor government by Federal bureaucracies with men whose philosophies and convictions are much the same as ours. If we delay too long in our efforts to protect freedom we may have little freedom to protect.

Sincerely,
JIM MARSH, President.

ALUMNI DAY, 1952

With the registration of 161 members, the Alumni Day began on June 5th with clinico-pathologic conferences conducted by Drs. James G. Arnold, Jr. and Maurice C. Pincoffs. Following the conferences, the Alumni Honor Award and gold key were presented to Dr. Louis A. Buie, class of 1915. Dr. Monte Edwards then introduced Dr. Buie who spoke at length on the subject "The Fruit of Loyal Nature and of Noble Mind" (complete address is published elsewhere in the Bulletin). At the conclusion of Dr. Buie's address, luncheon was served, at which time the registration increased to 238.

Following the luncheon President Pessagno called to order the annual meeting of the Alumni Association, the registration now numbering about 55. At this meeting the minutes of the previous meeting of June 7, 1951 were read and accepted. The treasurer's report was next given by Dr. Thurston R. Adams. Dr. Louis Krause read



Dr. Louis A. Buie Addresses Medical Alumni Association

the necrology, listing 99 Alumni who had died during the previous year. Dr. Albert E. Goldstein next moved that the members of the class of 1952 be elected to membership in the Association. These 97 graduates were then unanimously accepted for membership.

The report of the nominating committee was then read. The officers for the coming year include Dr. James T. Marsh, class of 1924, President and Drs. Frank N. Ogden, Eugene Baumgartner and William Fisher as Vice-presidents, Dr. Daniel E. Pessagno



1952 Alumni Banquet a huge success.

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1952 Alumni Banquet—several close-up views



A part of the class of 1927

First row, l to r—C. W. Peake, R. L. Lambros, F. B. Teague.

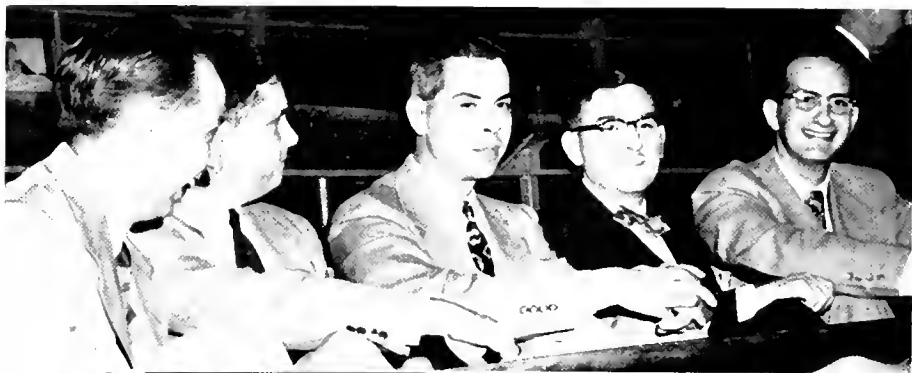
Second row, l to r—John Moran, J. M. Adzima, W. W. Chase, Frank K. Morris.

Class of 1932

First row, l to r—A. A. Krieger, D. Blum, J. Shaw.

Second row, l to r—J. E. Savage, A. Karfgin, S. Siegel.

Third row, l to r—J. Leffert, S. Gans, S. Legum, W. MacMillan, S. Proctor, H. Berger.



A few from '42

L to r—L. Koleshko, J. C. Osborne, Frank Concilus, David Bacharach, John D. Rosin.

These too from '42

1. Frank Concilus. 2. David Furnari. 3. J. Howard Franz. 4. Theodore Kardash. 5. E. Roderick Shipley. 6. John C. Osborne. 7. Lawrence Koleshko. 8. Joseph G. Bird.

Drs. Gans, Conn and Cohen.



Snapped at the luncheon—Drs. Lyell and R. E. Booker, class of 1902

Dr. John M. Scott, class of 1938 and President of the class of 1938, speaks at the dedication of the Sabatino Memorial.

Dr. John D. Rosin speaks with Dr. Harry Goldsmith, Chief of the Mental Hygiene Clinic of the Veterans Administration Regional Office.

as retiring President becoming Chairman of the Board of Directors. Dr. Albert E. Goldstein was named Representative to the General Alumni Board replacing Dr. John A. Wagner who became his alternate. Dr. Gibson J. Wells was elected to the Nominating Committee and Dr. Ernest I. Cornbrooks became the committee's Chairman.

As is customary the new members of the Alumni Association will receive the Bulletin free for a period of one year as a gift from the Medical Alumni Association.

After the conclusion of the annual meeting Alumni reunions were held at various points throughout the city and at 7 P.M. 435 Alumni and guests gathered for the



Members of the class of 1902, University of Maryland, Baltimore Medical College and College of Physicians and Surgeons who were present to receive their FIFTY YEAR certificates.

annual dinner. Of a total of 29 members of the class of 1902 who received their fifty-year certificates, 15 were at the banquet to receive them in person from Dr. Daniel J. Pessagno, retiring President of the Medical Alumni Association.

The following alumni registered for the reunion:

1886

R. Sumter Griffith

1895

Nicholas G. Wilson

1897

Lucius N. Glenn

1898

Page Edmunds

1900

William H. Smith

1902

R. E. Booker	R. O. Lyell	Arthur M. Shipley
John H. Doyle	C. B. Messerley	S. Clark Steele
William Emrich	Frank Patterson	Berton W. Storrs
Lloyd H. Feick	H. D. Purdum	John Symington
	William Kelso White	

1903

John Evans	C. B. Ensor	J. A. Harold
------------	-------------	--------------

1904

J. Henry Orff	Charles Bagley, Jr.
---------------	---------------------

1906

Henry J. Walton

1909

Harry M. Robinson, Sr.

1910

Hugh R. Spencer	Norman Kirk	Erasmus H. Kloman
-----------------	-------------	-------------------

1911

Louis H. Douglass	William H. Triplett
-------------------	---------------------

1912

R. A. Allgood	M. Hinnant	Benjamin H. Long
James A. Duggan	R. A. Ireland	Edward H. Myer
Henderson Erwin	M. W. Kuhlman	L. O. Schwartz
Albert E. Goldstein	E. A. Livingston	H. W. Vinicombe
	A. W. Yocum	

1913

C. R. Edwards	Harry Goldsmith	W. Houston Toulson
---------------	-----------------	--------------------

1914

John F. Lutz	Austin H. Wood
--------------	----------------

1915

Louis A. Buie	Louis Diener	Robert B. Hill
---------------	--------------	----------------

1917

Charles H. Audet, Sr.	James Holmes	A. W. McGregor
Louis J. Bohl	Louis A. M. Krause	George Petrulias
W. C. Covey	James G. Marston	M. Silverstein
	Robert S. G. Welch	

1918

Joseph Sindler

1920

Howard A. Bubert	F. A. Holden	George D. Medairy
Louis C. Dobihal	A. H. Jackvony	D. J. Pessagno
	J. Morris Reese	

1921

Daniel F. Keegan

1922

Milton C. Lang	Julian P. Linke	J. Ogle Warfield
----------------	-----------------	------------------

1923

William S. Love

1924

James T. Marsh

1925

H. Edmund Levin	Lee W. Elgin
-----------------	--------------

1926

Margaret B. Ballard

1927

Joseph M. Adzima	I. Goldberg	John E. Moran
T. Nelson Carey	I. Kaplan	Frank K. Morris
Wm. W. Chase	B. K. Lenson-Lambros	C. W. Peake
	H. E. Reifschneider	F. B. Teague

1928

Hugh Bailey	Simon Brager
-------------	--------------

1929

Walter Anderson	O. Walter Spurrier
Jacob H. Conn	George H. Yeager

1930

Archie R. Cohen	Emil Hildenbrand
-----------------	------------------

1931

Arthur G. Siwinski

1932

Herbert Berger	Arthur Karfgin	J. Duer Moores
S. Daniel Blum	A. A. Krieger	Samuel Proctor
S. E. Ganz	J. Leffert	John E. Savage
Harry C. Hull	Samuel Legum	John J. Shaw
M. W. Jacobson	W. O. McMillan	Sidney Siegel

1935

Ernest I. Cornbrooks, Jr.	William G. Helfrich
Edward F. Cotter	Josiah Hunt
Howard B. Mays	

1936

Harry C. Bowie	Walter E. Karfgin	D. McClelland Dixon
----------------	-------------------	---------------------

1937

Eugene S. Bereston	Sigmund Goldberg	Joseph Muse, Jr.
Louis E. Daily	E. T. Lisansky	Samuel T. R. Revell, Jr.
Everett S. Digges	D. Frank Kaltreider	Morton M. Spielman

1938

Robert C. Sheppard	John A. Wagner	Theodore E. Woodward
--------------------	----------------	----------------------

1939

Raymond M. Cunningham	Dexter L. Reimann
-----------------------	-------------------

1940

Edmund Beacham	Raymond C. V. Robinson
James Karns	W. H. Townshend, Jr.

1942

David Bacharach	Robert C. Irwin	John Osborne
Joseph G. Bird	Everett D. Jones	John D. Rosin
Frank Concilus	Theodore Kardash	E. R. Shipley
J. Howard Franz	Lawrence Koleshko	E. Andrew Zepp
	Loy M. Zimmerman	

1943

DeVoe K. Meade	Edwin H. Stewart, Jr.	Stephen Van Lill
----------------	-----------------------	------------------

1944

R. Adams Cowley	F. X. Paul Tinker
-----------------	-------------------

1945

Sarah Cook	S. Malone Parker
------------	------------------

1946

E. R. Jennings	Edward P. Smith, Jr.
August Kiel	Joseph B. Workman

1947

John F. Hogan, Jr.	Arlie Mansburger
F. A. Laraino	Carl F. Mattern
E. Anne Dentry Mattern	

1948

H. Patterson Mack

1950

Francis J. Borges	Philip W. Heuman	Charles Bagley, III
-------------------	------------------	---------------------

1951

J. W. Bossard	Roger Scott
---------------	-------------

1952

R. E. Ahlquist, Jr.	DeWitt T. Hunter, Jr.	William A. Mathews
Leon D. Hankoff	Laurel V. Hunter	Harry M. Walsh

Faculty

James G. Arnold, Jr.	Frank H. J. Figge	Monte Edwards
Ruth Lee Briscoe	Gordon Gibbs	J. Mason Hundley, Jr.

STUDENTS HONOR ALUMNI

'53 YEAR BOOK DEDICATED TO MEDICAL ALUMNI ASSOCIATION

The student year book for 1953, *Terra Mariae Medicus*, will be dedicated to the Medical Alumni Association. This gesture is in response to the many interests the Medical Alumni Association has shown on behalf of the School of Medicine and the student body.

The staff of the year book is anxious to enlist the aid of as many Alumni as possible by soliciting them as patrons or as subscribers to the year book.

The 1953 year book will contain many interesting photographs of Alumni, of the buildings of the School of Medicine and will carry a sketch of the Medical Alumni Association, its accomplishments and its plans. The volume should be of continuing

interest throughout the years and might well make a valuable addition to the library of any medical Alumnus.

Below is a coupon which may be used for your convenience in contributing toward this interesting student project and also in order to obtain a copy when published. The estimated publication date will be the first week in June and copies should be available for distribution on Alumni Day.

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City and state _____



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FRATERNAL NEWS SECTION

PHI BETA PI



Zeta Chapter held its annual election in May, 1952. The following undergraduates are serving as officers during the current year.

Archon: James T. Keegan
Vice Archon: Arthur V. Whittaker
Secretary: Charles R. Koons
Treasurer: Kenneth H. White, Jr.
Editor: John F. Hartman
Historian: Otto C. Beyer

Dr. Emmett B. Carmichael, Supreme Archon of Phi Beta Pi, visited the Chapter recently and was present at the initiation exercises.

Several members of the Faculty of the School of Medicine have been recently initiated into Phi Beta Pi. These include Dr. Vernon E. Krah, Associate Professor of Anatomy, Dr. Frederick P. Ferguson, Associate Professor of Physiology, and Dr. Andrew G. Smith, Assistant Professor of Bacteriology.

An important item on the calendar for this year is the Thirtieth Annual National Convention of Phi Beta Pi which will be held in Birmingham, Alabama, December 29-31. Mr. Foster L. Bullard, Jr. will be the official delegate at this meeting.

Dr. William C. Duffy, class of 1940, recently contributed a combination radio and phonograph for use in the fraternity rooms.

Plans have recently been announced for continuing the monthly seminars in which topics of current medical interest are presented by students and members of the Chapter's Alumni group.

OBITUARIES

Dr. Anthony G. Rytina

Dr. Anthony G. Rytina, class of 1905, died on September 15, 1952, at the Kent-Queen Anne Hospital at Chestertown, Maryland. Dr. Rytina was 70.

A graduate of Loyola College, he first served as instructor in the clinical laboratory at the University of Maryland following his graduation. In the next five years he was named to various positions in the out-patient department of the Johns Hopkins Hospital Phipp's Clinic and later became Chief of Urology in the out-patient clinic at the Mercy Hospital. Dr. Rytina was one of the first physicians in the City of Baltimore to use salvarsan in the treatment of venereal diseases.

Dr. Frederick J. Bampfield

Dr. Frederick J. Bampfield, class of 1917, and wellknown Baltimore anesthesiologist died at his mother's home in Niagara Falls, New York on September 20, 1952.

Following his graduation he served for a period as First Lieutenant in the U. S. Army Medical Corps and at the end of World War I he served as an intern at the Maryland General Hospital and later at St. Agnes Hospital. For a number of years Dr. Bampfield was active as a specialist in anesthesiology.

Dr. Rudolph A. Michelson

Dr. Rudolph A. Michelson, P & S, class of 1909, died in Baltimore on August 21, 1952, aged 66. While his career was devoted chiefly to general practice, Dr. Michelson was intensely interested in the intestinal tract and served on the staff of the Johns Hopkins Hospital in the gastro-intestinal clinic since 1914.

Dr. Chester J. Lubinski

Dr. Chester J. Lubinski, class of 1937, died suddenly after a heart attack at his home in Baltimore. He was 40 years old.

A native of Baltimore, Dr. Lubinski graduated from Loyola High School and Loyola College and following his graduation from the School of Medicine was a member of the staff of Bon Secours Hospital. Dr. Lubinski was engaged in general practice and also served as a Deputy Medical Examiner for the City of Baltimore.

Dr. Louis J. Kroll

Dr. Louis J. Kroll, class of 1936, died in Baltimore on February 28, 1952. Dr. Kroll received his early education at the Baltimore City College and his pre-medical education at the Johns Hopkins University. Following his graduation from the School of Medicine he served his rotating internship at the South Baltimore General Hospital where he subsequently served a residency in medicine. For a few years Dr. Kroll was associated with the late Dr. Harvey G. Beck.

Dr. Thomas A. F. Stevens

Dr. Thomas A. F. Stevens, class of 1912, age 66, died in Baltimore on July 26, 1952.

Dr. Stevens receiving his early education in the Baltimore public schools, he was a graduate of the School of Pharmacy of the University of Maryland and subsequently of the School of Medicine. After receiving his doctorate he served as resident physician at the Mount Alto State Sanatorium, Mount Alto, Pennsylvania and later as Superintendent of the Springfield Lake Hospital in Akron, Ohio. He then returned to Baltimore, becoming active on the staffs of the St. Joseph's, Bon Secours, Franklin Square, South Baltimore, and Church Home Hospitals.

Dr. William A. Gracie

Dr. William A. Gracie, class of 1910, died on December 28, 1951 at his home in Cumberland, Maryland. Born in Eckhart Mines, Maryland on October 14, 1884, he attended the public schools in Allegany County. After his graduation from the School of Medicine he returned to Allegany County where he practiced mainly in Cumberland. He was a member of the staff of the Memorial Hospital and the Allegany Hospital in Cumberland. Dr. Gracie was Vice-president of the Medical and Chirurgical Faculty of Maryland at the time of his death and was a Fellow of the American College of Surgeons.

Armstrong, Tremain Ernst, Hopewell, Va.; P & S, class of 1899; aged 74; served during World War I; died, July 8, 1952, of pulmonary embolism.

Bennett, Perceval Robert, Bryson City, N. C.; class of 1916; aged 59; died, May 23, 1952, of gastrojejunal fistula and peptic ulcer.

Bock, Charles Aloysius, Wexford, Pa.; class of 1935; aged 46; died, recently, of lymphosarcoma.

Coble, Aaron C., Dauphin, Pa.; class of 1885; aged 93; also a pharmacist; died, July 13, 1952.

Eller, Albert J., North Wilkesboro, N. C.; P & S 1893; aged 84; died, April 28, 1952, of cardiorenal disease.

Hawkins, Arthur Hanson, Cumberland, Md.; P & S class of 1895; aged 83; died, June 9, 1952, of hypertension, cardiovascular renal disease and uremia.

Imbrie, Clarence Elwood, Butler, Pa.; B.M.C., class of 1904; aged 77; died, April 13, 1952, of coronary occlusion.

Keagy, Charles A., Hanover, Pa.; B.M.C., class of 1902; aged 77; died, March 26, 1952.

Lahmers, Frederick, Akron, O.; B.M.C., class of 1898; aged 79; died, March 29, 1952, of arteriosclerotic heart disease

Pritchard, John Lamb, Windsor, N. C.; P & S, class of 1906; aged 73; died, May 2, 1952, of cerebral hemorrhage.

Rivers, Dwight Guy, Crumpler, W. Va.; class of 1910; aged 66; died, March 9, 1952.

Roche, Thomas Joseph, Bridgeport, Conn.; P & S, class of 1911; aged 68; died, April 30, 1952, of hypertensive arteriosclerosis.

Shipp, George William, Newton, N. C.; class of 1910; aged 68; died, May 18, 1952, of uremia and nephritis.

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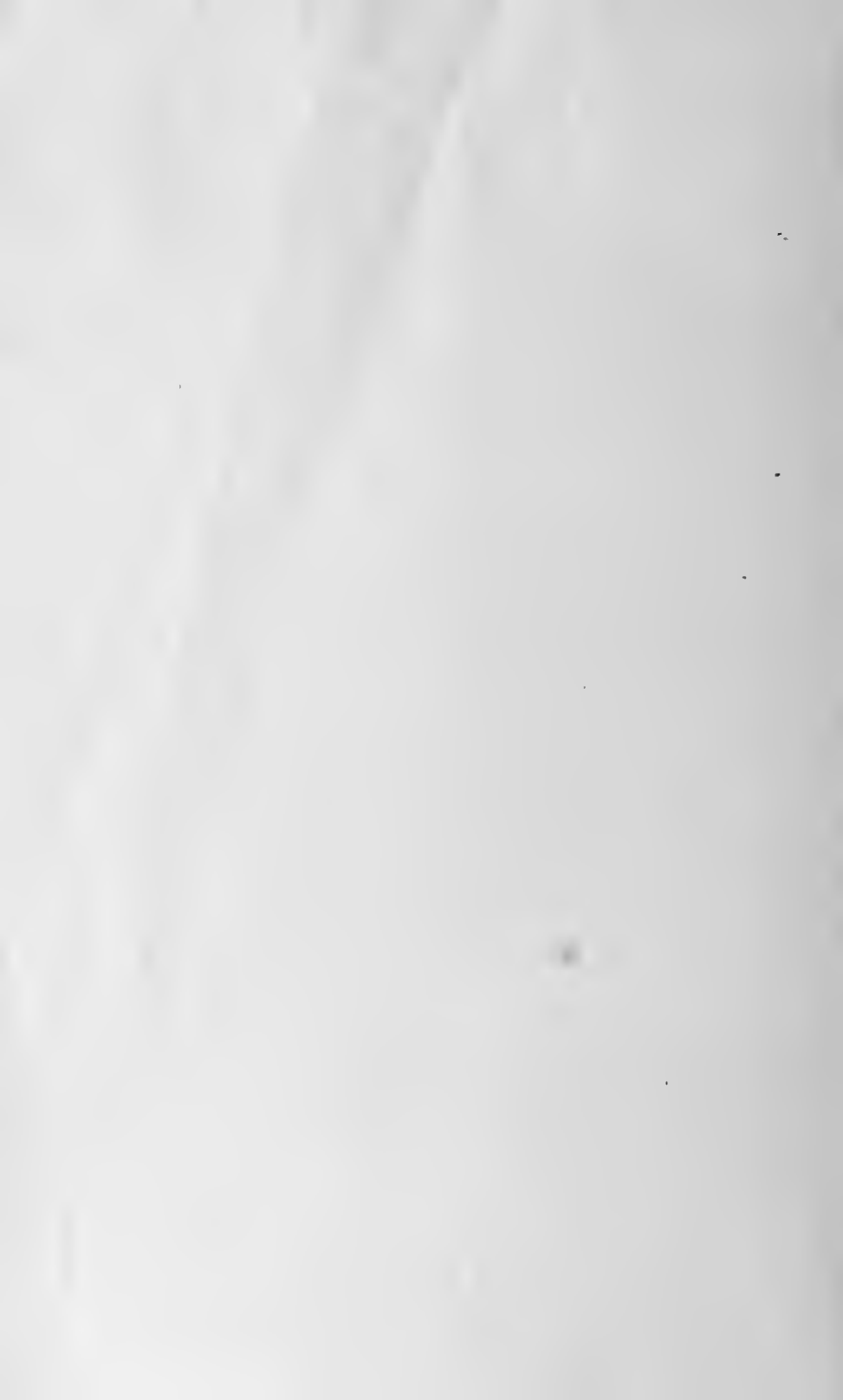
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BALTIMORE SCHOOLS—UNIVERSITY OF MARYLAND

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|-------------------------------------------------------------------------|-----------------------------------|
| 1. Original Medical Building | 7. University Hospital |
| 2. Laboratory Building, Medicine | 8. Nurses' Home, Medicine |
| 3. Bressler Building, Medicine | 9. School of Pharmacy |
| 4. Gray Laboratory, Student's Lounge, Medicine | 10. School of Dentistry |
| 5. Administration Building, College of Education,
Baltimore Division | 11. Dental Clinic |
| 6. Medical Library | 12. Out-Patient Clinics, Medicine |
| | 13. School of Law |

UNIVERSITY OF MARYLAND

SCHOOL *of* MEDICINE

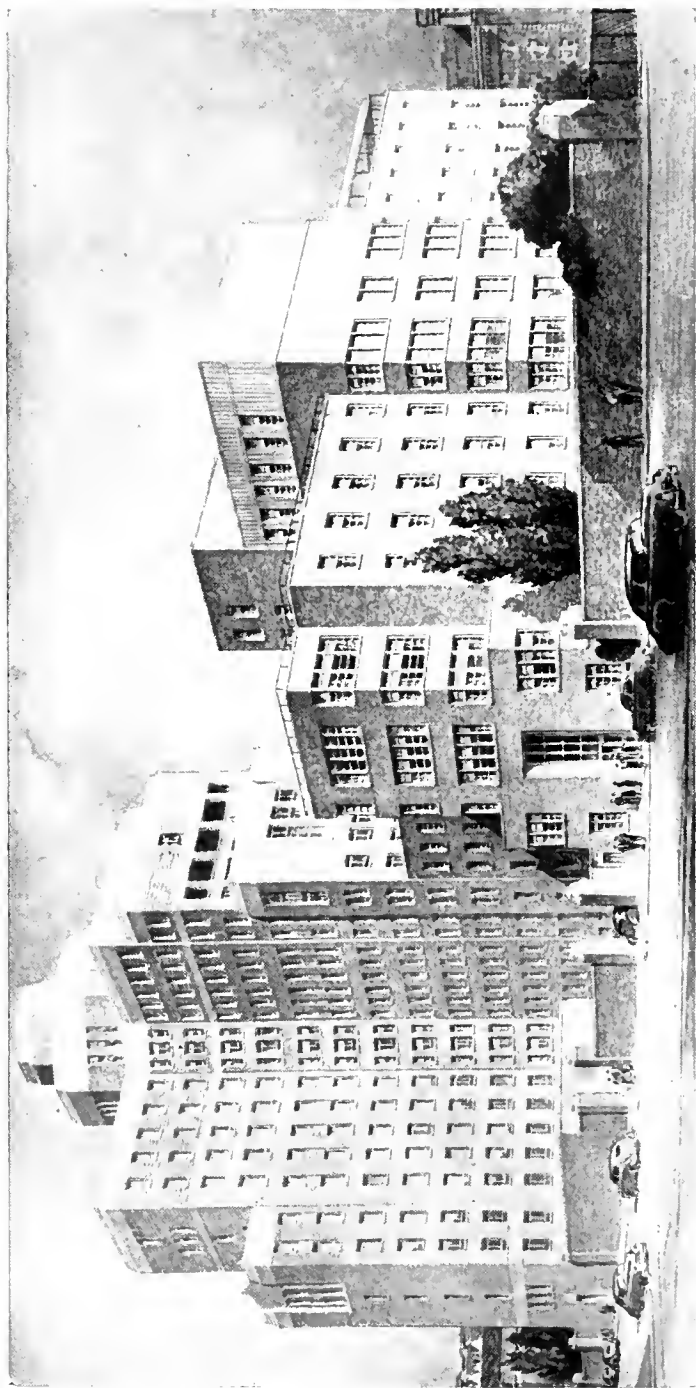
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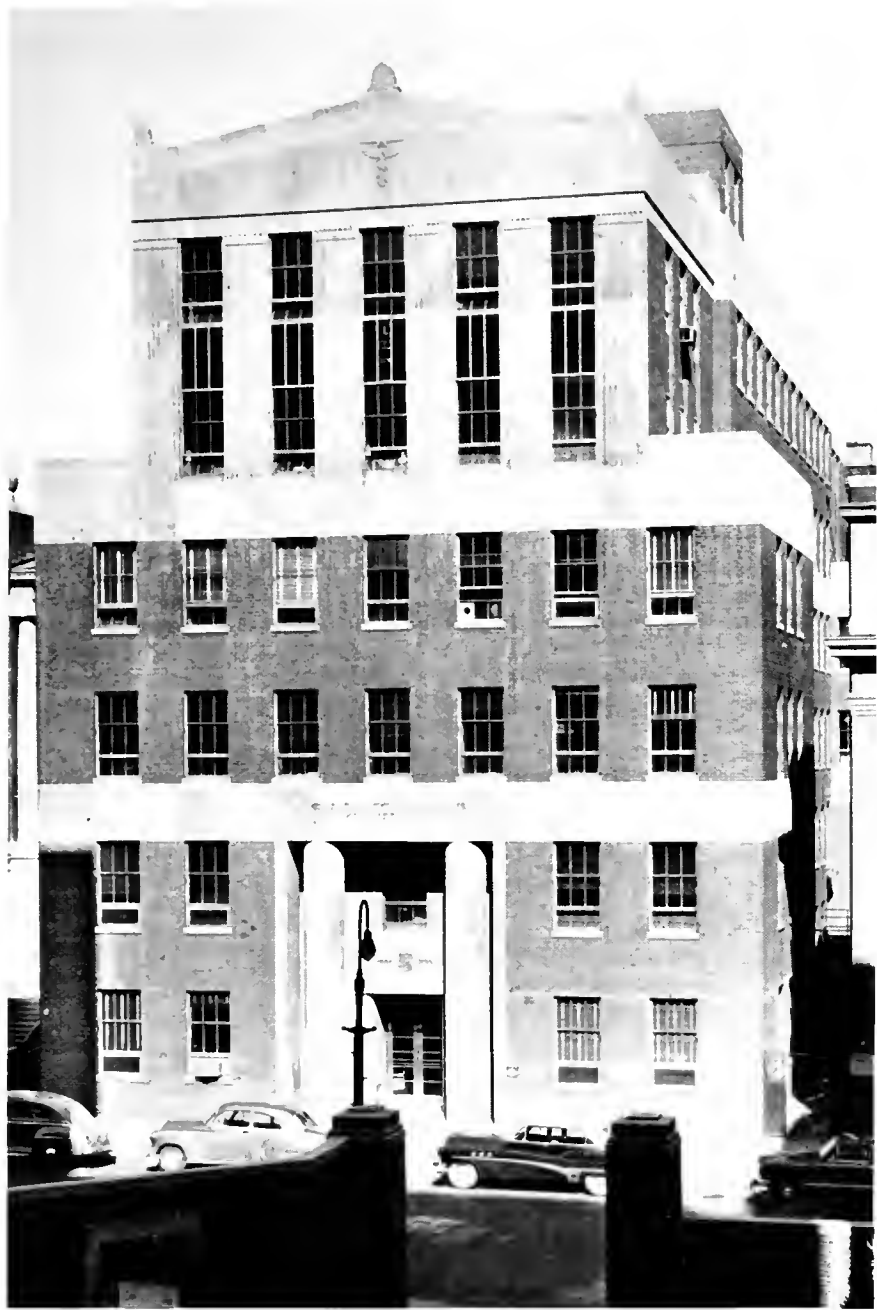
Announcements for

The One Hundred Forty-Seventh Academic Session
1952-1953

Catalogue of
The One Hundred Forty-Sixth Academic Session
1951-1952



University Hospital and Psychiatric Institute



THE FRANK C. BRESSLER RESEARCH LABORATORY

CALENDAR

1952

JULY

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CALENDAR

ACADEMIC YEAR—SEPTEMBER 18, 1952 TO JUNE 6, 1953

1952

September 8, 9, 10

Re-examinations for advancement

FIRST SEMESTER—September 18, 1952 to January 24, 1953

September 16	Tuesday	*Registration, payment of fees, freshmen & sophomores
September 17	Wednesday	*Registration, payment of fees, all other students
September 18	Thursday	Instruction begins at 8:30 a.m.
November 25	Tuesday	Instruction suspended at 5:00 p.m. Thanksgiving Holiday
December 1	Monday	Instruction resumed
December 20	Saturday	Instruction suspended at 5:00 p.m. Christmas Holiday

1953

January 5	Monday	Instruction resumed
January 19	Monday	Midyear examinations
	to	*Payment of fees for second semester
January 24	Saturday	First semester completed, 2:00 p.m.

SECOND SEMESTER—January 26 to June 6, 1953

January 26	Monday	Instruction begins at 8:30 a.m.
February 23	Monday	Holiday—Washington's Birthday
February 24	Tuesday	Instruction resumed
April 2	Thursday	Instruction suspended at 5:00 p.m. Easter Holiday
April 7	Tuesday	Instruction resumed
April 28	Tuesday	Juniors and Seniors excused to attend annual meetings of the Medical & Chirurgical Faculty
April 29	Wednesday	
May 18	Monday	Junior examinations begin
May 23	Saturday	Senior classes cease at 5:00 p.m.
May 25	Monday	Junior examinations continue Sophomore and Freshman examinations begin
May 30	Saturday	Holiday—Memorial Day
June 1	Monday	Announcement of graduates
June 6	Saturday	Commencement Second Semester completed at 12:30 p.m.

PARTIAL CALENDAR FOR 1953-1954

1953

September 7, 8, 9		Re-examinations for advancement
September 15	Tuesday	*Registration, payment of fees, freshmen & sophomores
September 16	Wednesday	*Registration, payment of fees, all other students
September 17	Thursday	Instruction begins at 8:30 a.m.

* A student who fails to register prior to or within the day or days specified will be called upon to pay a late registration fee of five dollars (\$5.00). The last day of registration with fee added to regular charges is Saturday of the week in which registration begins.

The offices of the registrar and comptroller are open daily from 9:00 A.M. to 4:00 P.M., and Saturday from 9:00 A.M. to 12:00 noon.



ORGANIZATION

THE UNIVERSITY OF MARYLAND

HARRY CLIFTON BYRD, B.S., LL.D., D.Sc., *President and Executive Officer*

BOARD OF REGENTS

		<i>Term Expires</i>
WILLIAM P. COLE, JR., <i>Chairman</i>	Baltimore.....	1958
J. MILTON PATTERSON, <i>Treasurer</i>	Baltimore.....	1953
B. HERBERT BROWN, JR.....	Baltimore.....	1960
EDWARD F. HOLTER.....	Middletown.....	1959
LOUIS L. KAPLAN.....	Baltimore.....	1961
E. PAUL KNOTTS.....	Denton.....	1954
ARTHUR O. LOVEJOY.....	Baltimore.....	1960
CHARLES P. MCCORMICK.....	Baltimore.....	1957
HARRY H. NUTTLE.....	Denton.....	1957
PHILIP C. TURNER.....	Parkton.....	1959
MRS. JOHN L. WHITEHURST.....	Baltimore.....	1956

Members of the Board are appointed by the Governor of the State for terms of nine years each, beginning the first Monday in June.

The President of the University of Maryland is, by law, Executive Officer of the Board.

A regular meeting of the Board is held the third Friday in each month, except during the months of July and August.

Each school has its own Advisory Board, Council, or Committee composed of the Dean and members of its faculty, which controls the internal affairs of the group it represents.

The University has the following educational organizations:

<i>At Baltimore</i>	
The School of Dentistry	The College of Business and Public Administration
The School of Law	The College of Education
The School of Medicine	The Glenn L. Martin College of Engineering and Aeronautical Sciences
The School of Nursing	The College of Home Economics
The School of Pharmacy	The Graduate School
The College of Special and Continuation Studies (Baltimore Division)	The College of Military Science
	The College of Physical Education, Recreation and Health
	The College of Special and Continuation Studies
	The Summer School
<i>At College Park</i>	
The College of Agriculture	
The College of Arts and Sciences	

ADMINISTRATIVE OFFICERS

SCHOOL OF MEDICINE

H. C. Byrd, B.S., LL.D., D.Sc.....	<i>President of the University</i>
H. Boyd Wylie, M.D.....	<i>Dean</i>
Edgar F. Long, Ph.D.....	<i>Dean of Students</i>
Alma H. Preinkert, M.A.....	<i>Registrar</i>
G. Watson Algire, M.S.....	<i>Director of Admissions</i>

SCHOOL *of* MEDICINE

FACULTY OF MEDICINE

EMERITI

J. M. H. ROWLAND, M.D., D.Sc., LL.D.

	Professor of Obstetrics, Emeritus; Dean, Emeritus
HENRY J. WALTON, M.D.....	Professor of Roentgenology, Emeritus
PAGE EDMUNDS, M.D.....	Professor of Traumatic Surgery, Emeritus
RUTH LEE BRISCOE.....	Librarian, Emeritus
HARVEY G. BECK, M.D., D.Sc.....	Professor of Clinical Medicine, Emeritus ⁶
IRVING J. SPEAR, M.D.....	Professor of Neurology, Emeritus
CARL L. DAVIS, M.D.....	Professor of Anatomy, Emeritus
ARTHUR M. SHIPLEY, M.D., D.Sc.....	Professor of Surgery, Emeritus
CLYDE A. CLAPP, M.D.....	Professor of Ophthalmology, Emeritus
ANDREW C. GILLIS, M.A., M.D., LL.D.....	Professor of Neurology, Emeritus
EDGAR B. FRIEDENWALD, M.D.....	Professor of Clinical Pediatrics, Emeritus

ADVISORY BOARD OF THE FACULTY

DEAN H. BOYD WYLIE, *Chairman*

O. G. HARNE, *Secretary*

GEORGE H. BUCK, *Ex Officio Member*

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MONTÉ EDWARDS
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A. H. FINKELSTEIN
RUSSELL S. FISHER
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MAURICE H. GREENHILL
FRANK W. HACHTEL
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HARRY C. HULL
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EDWARD A. KITLOWSKI

F. EDWIN KNOWLES
VERNON E. KRAHL
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LOUIS A. M. KRAUSE
PHILIP F. LERNER
EDWARD A. LOOPER
WILLIAM S. LOVE, JR.
JOHN F. LUTZ
HENRY J. L. MARRIOTT
ZACHARIAH MORGAN
THEODORE H. MORRISON
H. WHITMAN NEWELL
THOMAS R. O'ROURK
D. J. PESSAGNO
H. R. PETERS
MAURICE C. PINCOFFS
J. MORRIS REESE

⁶ Died Oct. 30, 1951.

CHARLES A. REIFSCNEIDER	HUGH R. SPENCER EDWARD STEERS	JOHN A. WAGNER C. GARDNER WARNER
DEXTER L. REIMANN	EDWIN H. STEWART, JR.	JOHN I. WHITE
HARRY M. ROBINSON, SR.	MATTHEW L. TABACK	HUNTINGTON WILLIAMS
MILTON S. SACKS	W. HOUSTON TOLSON	WALTER D. WISE
EMIL G. SCHMIDT	EDUARD UHLENHUTH	THEODORE E. WOODWARD
ANDREW G. SMITH	HENRY F. ULLRICH	THOMAS C. WOLFF
DIETRICH C. SMITH	RAYMOND E. VANDERLINDE	GEORGE H. YEAGER
FREDERICK B. SMITH	ALLEN F. VOSHELL	WAITMAN F. ZINN

ADVISORY COMMITTEE OF THE FACULTY

WILLIAM R. AMBERSON	O. G. HARNE, Assistant to the Dean, <i>Secretary</i>	MAURICE C. PINCOFFS
J. EDMUND BRADLEY	J. MASON HUNDLEY	EMIL G. SCHMIDT
LOUIS H. DOUGLASS	WALTER L. KILBY	HUGH R. SPENCER
C. REID EDWARDS	F. EDWIN KNOWLES, JR.	EDUARD UHLENHUTH
JACOB E. FINESINGER	JOHN C. KRANTZ, JR.	H. BOYD WYLIE, Dean <i>Chairman</i>
FRANK W. HACHTEL		

FACULTY OF MEDICINE

PROFESSORS

Myron S. Aisenberg, D.D.S., Professor of Pathology, School of Dentistry.
 William R. Amberson, Ph.D., Professor of Physiology and Head of the Department.
 Charles Bagley, Jr., M.A., M.D., Professor of Neurological Surgery.^{3a}
 Joseph C. Biddix, Jr., D.D.S., Professor of Oral Diagnosis, School of Dentistry.
 J. Edmund Bradley, M.D., Professor of Pediatrics and Head of the Department.
 Otto C. Brantigan, B.S., M.D., Professor of Surgical Anatomy, Clinical and Thoracic Surgery.
 T. Nelson Carey, M.D., Professor of Clinical Medicine.
 C. Jelleff Carr, Ph.D., Professor of Pharmacology.
 Richard G. Coblenz, M.A., M.D., Professor of Clinical Neurological Surgery.
 Edward C. Dobbs, D.D.S., Professor of Pharmacology, School of Dentistry.
 Brice M. Dorsey, D.D.S., Professor of Oral Surgery, School of Dentistry.
 Louis H. Douglass, M.D., Professor of Obstetrics and Head of the Department.
 Charles Reid Edwards, M.D., Professor of Surgery and Acting Head of the Department.
 Monte Edwards, M.D., Clinical Professor of Surgery and Professor of Proctology.

It is to be noted that for convenience of reference the names of the members of the Faculty are listed in the forepart of this catalogue in alphabetical order. The names are listed in order of seniority under each preclinical and clinical department of the school on subsequent pages.

On the lists of the Faculty of Medicine and Fellows and the Hospital and Dispensary staffs are given the names and positions assigned during the period July 1, 1952 to June 30, 1953 unless otherwise indicated. Changes are noted as follows:

¹ Appointments effective July 1, 1952.

² Promotions effective July 1, 1952.

³ Resignations.

^{3a} Resigned April 3, 1952.

⁴ Retirements.

⁵ Deaths.

⁶ Leave of absence.

- Ray Ehrensberger, Ph.D., Professor of Speech, College of Arts and Sciences.
Lloyd D. Felton, A.B., D.Sc., M.D., Visiting Research Professor of Bacteriology.^{3a}
Frank H. J. Figge, Ph.D., Professor of Anatomy.
Jacob E. Finesinger, M.D., Professor of Psychiatry and Head of the Department.
Russell S. Fisher, B.S., M.D., Professor and Head of the Division of Legal Medicine.²
Grason W. Gaver, D.D.S., Professor of Dental Prosthetics, School of Dentistry.
Frank W. Hachtel, M.D., Professor of Bacteriology and Head of the Department.
Harry C. Hull, M.D., Professor of Clinical Surgery.
J. Mason Hundley, Jr., M.A., M.D., Professor of Gynecology and Head of the Department.
Elliott H. Hutchins, M.A., M.D., Professor of Surgery.
F. L. Jennings, M.D., Professor of Clinical Surgery.
C. Loring Joslin, M.D., Professor of Pediatrics.
Walter L. Kilby, M.D., Professor of Roentgenology and Head of the Department.
Edward A. Kitlowski, A.B., M.D., Clinical Professor of Plastic Surgery.
John C. Krantz, Jr., Ph.D., D.Sc., Professor of Pharmacology and Head of the Department.
Louis A. M. Krause, M.D., Professor of Clinical Medicine.
Kenneth D. Legge, M.D., Professor of Clinical Urology.
Edward A. Looper, M.D., D.Oph., Professor of Otolaryngology and Head of the Department.
Theodore H. Morrison, M.D., Clinical Professor of Gastro-Enterology.
Alfred T. Nelson, M.D., Professor of Anaesthesiology and Head of the Department.³
Ernest B. Nuttall, D.D.S., Professor of Crown and Bridge, School of Dentistry.
Thomas R. O'Rourke, M.D., Professor of Otolaryngology.
D. J. Pessagno, A.B., M.D., Professor of Clinical Surgery.
H. Raymond Peters, A.B., M.D., Professor of Clinical Medicine.
Maurice C. Pincoffs, B.S., M.D., Professor of Medicine and Head of the Department.
Kyrle W. Preis, D.D.S., Professor of Orthodontics, School of Dentistry.¹
Kenneth V. Randolph, D.D.S., Professor of Operative Dentistry, School of Dentistry.
Charles A. Reifschneider, M.D., Clinical Professor of Traumatic Surgery.
John R. Reid, Ph.D., Visiting Professor of Psychiatry.
Harry L. Rogers, M.D., Clinical Professor of Orthopaedic Surgery.
Harry M. Robinson, Sr., M.D., Professor of Dermatology.
Emil G. Schmidt, Ph.D., LL.B., Professor of Biological Chemistry and Head of the Department.
Dietrich Conrad Smith, Ph.D., Professor of Physiology and Assistant Director Post-graduate Committee.
Hugh R. Spencer, M.D., Professor of Pathology and Head of the Department.
Thomas P. Sprunt, A.B., M.D., Professor of Clinical Medicine.
W. Houston Toulson, M.Sc., M.D., Professor of Urology.
I. Ridgeway Trimble, M.D., Professor of Clinical Surgery.
Eduard Uhlenhuth, Ph.D., Professor of Anatomy and Head of the Department.
Allen Fiske Voshell, A.B., M.D., Professor of Orthopaedic Surgery.
Huntington Williams, M.D., Dr. P.H., Professor of Hygiene and Public Health.
Walter D. Wise, M.D., Professor of Surgery.
George H. Yeager, B.S., M.D., Professor of Clinical Surgery and Director of Clinical Research.
Waitman F. Zinn, M.D., Professor of Otolaryngology.

^{3a} Resigned Mar. 31, 1952.

ASSOCIATE PROFESSORS

- Merle Ansberry, Ph.D., Associate Professor of Speech, College of Arts and Sciences.
 James G. Arnold, Jr., M.D., Associate Professor of Neurological Surgery.
 H. M. Bubert, M.D., Associate Professor of Medicine.
 Thomas R. Chambers, A.B., M.D., Associate Professor of Surgery.
 Carl Dame Clarke, Associate Professor of Art as Applied to Medicine.
 Charles N. Davidson, M.D., Associate Professor of Roentgenology.
 Ross Davies, M.D., Associate Professor of Hygiene and Public Health.
 J. S. Eastland, M.D., Associate Professor of Medicine.
 Francis A. Elliss, A.B., M.D., Associate Professor of Dermatology.²
 A. H. Finkelstein, M.D., Associate Professor of Pediatrics.
 Leon Freedom, M.D., Associate Professor of Neurology.
 Frederick P. Ferguson, Ph.D., Associate Professor of Physiology.
 William L. Garlick, A.B., M.D., Associate Professor of Thoracic Surgery and Associate in Surgery.²
 Moses Gellman, B.S., M.D., Associate Professor of Orthopaedic Surgery.
 Gordon E. Gibbs, A.B., M.A., Ph.D., M.D., Associate Professor of Clinical Pediatric Research.
 Maurice H. Greenhill, M.D., Associate Professor of Psychiatry.^{1a}
 Lewis P. Gundry, M.D., Associate Professor of Medicine.
 O. G. Harne, Associate Professor of Anatomy and Asst. to the Dean.
 Edward J. Herbst, Ph.D., Associate Professor of Biological Chemistry.²
 Hugh H. Hicks, D.D.S., Associate Professor of Periodontology, School of Dentistry.
 Cyrus F. Horine, M.D., Associate Professor of Surgery.
 Albert Jaffe, M.D., Associate Clinical Professor of Pediatrics
 Edward S. Johnson, M.D., Associate Professor of Surgery.
 Wedon Johnson, A.B., M.D., Associate Professor of Anesthesiology.^{3a}
 D. Frank Kaltreider, A.B., M.D., Associate Professor of Obstetrics.
 Fayne A. Kayser, M.D., Associate Professor of Otolaryngology.
 Vernon E. Krah, B.S., M.S., Ph.D., Associate Professor of Anatomy.
 Frederick T. Kyper, M.D., D.Sc., Associate Professor of Otolaryngology.
 R. W. Locher, M.D., Associate Professor of Clinical Surgery.
 William S. Love, Jr., A.B., M.D., Associate Professor of Medicine.
 Charles W. Maxson, M.D., Associate Professor of Surgery.
 Walter C. Merkel, A.B., M.D., Associate Professor of Pathology.
 Samuel Morrison, A.B., M.D., Associate Professor of Medicine and Gastro-enterology.
 James W. Nelson, M.D., Associate Professor of Surgery.
 H. Whitman Newell, M.D., Associate Professor of Psychiatry.
 C. W. Peake, M.D., Associate Professor of Surgery.
 J. Morris Reese, M.D., Associate Professor of Obstetrics.
 Dexter L. Reimann, B. S., M.D., Associate Professor of Pathology.
 Benjamin S. Rich, A.B., M.D., Associate Professor of Otolaryngology.
 Harry M. Robinson, Jr., B.S., M.D., Associate Professor of Dermatology.²
 Ida M. Robinson, A.B., B.S.L.S., Associate Professor of Library Science.
 Milton S. Sacks, M.D., Associate Professor of Medicine and Head of Clinical Pathology, Associate in Pathology.
 Isadore A. Siegel, A.B., M.D., Associate Professor of Obstetrics.²
 Frederick B. Smith, M.D., Associate Professor of Pediatrics.

^{3a} Resigned March 12, 1952.

William H. Smith, M.D., Associate Professor of Clinical Medicine.
 Edward Steers, Ph.D., Associate Professor of Bacteriology.
 George F. Sutherland, M.D., Associate Professor of Psychiatry.^{1b}
 Lewis C. Toomey, D.D.S., Associate Professor of Oral Surgery, School of Dentistry.
 J. McCullough Turner, Ph.D., Associate Professor of Physiology.³
 Henry F. Ullrich, M.D., D.Sc., Associate Professor of Orthopaedic Surgery.
 John A. Wagner, B.S., M.D., Associate Professor of Pathology.
 W. Wallace Walker, M.D., Associate Professor of Surgery and Surgical Anatomy.
 C. Gardner Warner, A.B., M.D., Associate Professor of Pathology.
 William H. F. Warthen, A.B., M.D., Associate Professor of Hygiene & Public Health.
 T. Conrad Wolff, M.D., Associate Professor of Medicine and Head of the Division of
 Physical Diagnosis.
 Theodore E. Woodward, M.D., Associate Professor of Medicine
 Robert B. Wright, B.S., M.D., Associate Professor of Pathology.

ASSISTANT PROFESSORS

Thurston R. Adams, M.D., Assistant Professor of Surgery and Proctology.
 Marie A. Andersch, Ph.D., Assistant Professor of Biochemistry in Medicine.²
 Donald J. Barnett, M.D., Assistant Professor of Roentgenology.
 Eugene S. Bereston, A.B., M.D., Assistant Professor of Dermatology.²
 Annie M. Bestebeurtje, B.S., M.D., Assistant Professor of Pediatrics.^{1a}
 H. F. Bongardt, M.D., Assistant Professor of Surgery.
 Leo Brady, A.B., M.D., Assistant Professor of Gynecology.
 Simon H. Brager, M.D., Assistant Professor of Surgery and Proctology.
 Raymond M. Burgison, Ph.D., Assistant Professor of Pharmacology.
 Beverley C. Compton, A.B., M.D., Assistant Professor of Gynecology.
 Ernest I. Cornbrooks, Jr., A.B., M.D., Assistant Professor of Gynecology.
 Edward F. Cotter, M.D., Assistant Professor of Medicine, Associate in Neurology.
 J. G. N. Cushing, M.D., Assistant Professor of Psychiatry.
 John DeCarlo, A.B., M.D., Assistant Professor of Roentgenology.
 William K. Diehl, M.D., Assistant Professor of Gynecology and Director Gynecological
 Oncology.¹
 Everett S. Diggs, B.S., M.D., Assistant Professor of Gynecology.
 Stanley H. Durlacher, M.S., M.D., Assistant Professor of Legal Medicine.^{2, 3a}
 William W. Elgin, M.D., Assistant Professor of Psychiatry.
 Maurice Feldman, M.D., Assistant Professor of Gastro-Enterology.
 Jerome Fineman, M.D., Assistant Professor of Pediatrics.
 Wetherbee Fort, M.D., Assistant Professor of Medicine.
 Frank J. Geraghty, A.B., M.D., Assistant Professor of Medicine.
 Francis W. Gillis, M.D., Assistant Professor of Urology.
 Samuel S. Glick, M.D., Assistant Professor of Pediatrics.
 Albert E. Goldstein, M.D., Assistant Professor of Pathology.
 George Govatos, A.B., M.D., Assistant Professor of Surgery.

Effective appointment dates: Associate Professors.

^{1a} February 1, 1952.

^{1b} May 1, 1952.

^{3a} Resigned Aug. 31, 1952.

Robert G. Grenell, B.A., M.Sc., Ph.D., Assistant Professor Psychiatric Research.
 John F. Hogan, M.D., Assistant Professor of Urology.
 James R. Karns, B.S., M.D., Assistant Professor of Medicine² and Director Student Health Service.
 F. Edwin Knowles, Jr., M.D., Assistant Professor of Ophthalmology and Chairman of the Department.
 H. Vernon Langeluttig, M.D., Assistant Professor of Medicine.
 C. Edward Leach, M.D., Assistant Professor of Medicine.
 Philip L. Lerner, M.D., Assistant Professor of Neurology.
 Ephriam T. Lisansky, M.D., Assistant Professor of Medicine and Associate in Psychiatry.
 Hans W. Loewald, M.D., Assistant Professor of Psychiatry.
 John F. Lutz, A.B., M.D., Assistant Professor of Anatomy.
 Henry J. L. Marriott, A.M., B.M., Assistant Professor of Medicine.
 Howard B. Mays, M.D., Assistant Professor of Genito-Urinary Surgery and Instructor in Urology and Pathology.
 W. Raymond McKenzie, M.D., Assistant Professor of Otolaryngology.
 Karl F. Mech, B.S., M.D., Assistant Professor of Anatomy.
 Zachariah Morgan, M.D., Assistant Professor of Gastro-Enterology.
 Hugh B. McNally, B.S., M.D., Assistant Professor of Obstetrics.
 Harry M. Murdock, B.S., M.D., Assistant Professor of Psychiatry.
 George McLean, M.D., Assistant Professor of Medicine.
 Samuel T. R. Revell, Jr., M.D., Assistant Professor of Medicine.
 I. O. Ridgely, M.S., M.D., Assistant Professor of Surgery.
 William F. Rienhoff, M.D., Assistant Professor of Surgery.
 Robert A. Reiter, M.D., Assistant Professor of Medicine.
 R. C. V. Robinson, B.S., M.D., Assistant Professor of Dermatology.²
 John E. Savage, B.S., M.D., Assistant Professor of Obstetrics.
 Sidney Scherlis, M.D., Assistant Professor of Medicine,² and Associate in Pediatrics.
 Kathryn L. Schultz, M.D., Assistant Professor of Psychiatry.
 Theodore A. Schwartz, M.D., Assistant Professor of Otolaryngology.
 William M. Seabold, M.D., Assistant Professor of Pediatrics.
 William B. Settle, M.D., Assistant Professor of Surgical Anatomy and Associate in Surgery.
 Albert Shapiro, B.S., M.D., Assistant Professor of Dermatology.²
 Arthur G. Siwinski, A.B., M.D., Assistant Professor of Surgery.
 Andrew G. Smith, Ph.D., Assistant Professor of Bacteriology.
 Edward P. Smith, M.D., Ph.G., Assistant Professor of Gynecology.
 Sol Smith, M.D., Assistant Professor of Medicine.
 Matthew L. Taback, A.B., A.M., Assistant Professor of Hygiene and Public Health.
 Harry Teitelbaum, B.S., M.D., Ph.D., Assistant Professor of Medicine.²
 Isidore William Towlen, M.D., Assistant Professor of Anesthesiology.³
 Raymond E. Vanderlinde, A.B., Ph.D., Assistant Professor of Biological Chemistry.
 Philip S. Wagner, M.D., Assistant Professor of Psychiatry.
 Gibson J. Wells, M.D., Assistant Professor of Pediatrics.
 John I. White, Ph.D., Assistant Professor of Physiology.²
 Milton J. Wilder, M.D., Assistant Professor of Orthopedic Surgery.
 Israel Zeligman, A.B., M.D., Assistant Professor of Dermatology.²

Effective appointment dates: Assistant Professors.

^{1a} Oct. 1, 1951.

ASSOCIATES

- Conrad B. Acton, M.D., Associate in Medicine and Instructor in Pathology.
 Leon Ashman, B.S., M.D., Associate in Medicine.
 J. Tyler Baker, B.S., M.D., Associate in Obstetrics.
 Margaret B. Ballard, M.D., Associate in Obstetrics.
 Charles P. Barnett, A.B., M.D., Associate in Pathology.
 Robert E. Bauer, A.B., M.D., Associate in Medicine.
 Edmund G. Beacham, M.D., Associate in Medicine.
 Robert Z. Berry, A.B., M.D., Associate in Otolaryngology.
 Louis V. Blum, M.D., Associate in Medicine.
 Harry C. Bowie, B.S., M.D., Associate in Surgical Anatomy.
 Kenneth B. Boyd, A.B., M.D., Associate in Gynecology.
 Frank J. Brady, M.D., Associate in Anaesthesiology.³
 Charles Bramble, A.M., Ph.D., Associate in Medicine.²
 Henry A. Briele, M.D., Associate in Postgraduate Surgery.
 William R. Bundick, M.D., Associate in Dermatology.
 Harold H. Burns, M.D., Associate in Surgery.
 M. Paul Byerly, M.D., Associate in Medicine.
 Richard A. Carey, M.D., Associate in Medicine.³
 Osborne D. Christensen, M.D., Associate in Obstetrics.
 Jonas Cohen, M.D., Associate in Medicine.
 Edward R. Dana, A.B., M.D., Associate in Roentgenology.
 John B. DeHoff, M.D., Associate in Medicine.²
 John M. Dennis, B.S., M.D., Associate in Radiology.²
 Francis G. Dickey, M.D., Associate in Medicine.
 D. McClelland Dixon, M.D., Associate in Obstetrics.
 William G. Ebeling III, B.S., M.D., Associate in Medicine.^{1, 6a}
 J. J. Erwin, M.D., Associate in Gynecology.
 L. K. Fargo, M.D., Associate in Urology.
 William L. Fearing, M.D., Associate in Neurology.
 Donald E. Fisher, M.D., Associate in Pathology.
 William H. Fisher, M.D., Associate in Postgraduate Surgery.
 Samuel L. Fox, Ph.G., B.S., M.D., Associate in Otolaryngology, and Instructor in Physiology.
 Irving Freeman, M.D., Associate in Medicine.
 Henry C. Freimuth, Ph.D., Associate in Legal Medicine.
 Joseph E. Furnari, M.D., Associate in Medicine and Director, Medical Out-Patient Department.²
 John S. Haines, M.D.,² Associate in Urology.
 Alvin J. Hartz, A.B., M.D., Associate in Medicine.
 Raymond F. Helfrich, A.B., M.D., Associate in Surgery.
 W. Grafton Herspberger, M.D., Associate in Medicine.
 Henry W. J. Holljes, M.D., Associate in Medicine and Director Medical Care Clinic.
 Z. Vance Hooper, M.D., Associate in Gastro-Enterology.
 Clewell Howell, B.S., M.D., Associate in Pediatrics.
 Benjamin H. Isaacs, A.B., M.D., Associate in Otolaryngology.

^{6a} On leave July 1, to Oct. 1, 1952.

Meyer W. Jacobson, M.D., Associate in Medicine.
 Joseph V. Jerardi, B.S., M.D., Associate in Surgery.
 Hugh J. Jewett, M.D., Associate in Urology.
 Arthur Karfigin, B.S., M.D., Associate in Medicine.
 Walter Karfigin, M.D., Associate in Medicine.
 Joseph I. Kemler, M.D., Associate in Ophthalmology.
 Albert W. Kitts, M.D., Associate in Postgraduate Pediatrics.
 Louis B. Kroll, A.B., M.D., Associate in Medicine.⁵
 Elizabeth LaForge, M.S.S., Associate in Psychiatric Social Work.
 Samuel Legum, M.D., Associate in Medicine.
 Richard Lindenberg, M.D., Associate in Legal Medicine.^{1d}
 H. Edmund Levin, M.D., Associate in Bacteriology.
 Kurt Levy, M.D., Associate in Medicine.
 William B. Long, M.D., Associate in Postgraduate Surgery.
 William V. Lovitt, Jr., B.S., M.D., Associate in Legal Medicine.²
 H. Patterson Mack, M.D., Associate in Anatomy.^{6b}
 G. Bowers Mansdorfer, B.S., M.D., Associate in Pediatrics.
 I. H. Maseritz, M.D., Associate in Orthopaedic Surgery.
 William J. McClafferty, M.D., Associate in Legal Medicine.
 George G. Merrill, M.D., Associate in Neurology.
 Lyle J. Millan, M.D., Associate in Urology.
 Frank K. Morris, A.B., M.D., Associate in Gynecology.
 J. Huff Morrison, B.S., M.D., Associate in Obstetrics.
 S. Edwin Muller, M.D., Associate in Medicine.
 Patrick C. Phelan, Jr., A.B., M.D., Associate in Anatomy.³
 Ross Z. Pierpont, M.D., Associate in Surgical Anatomy and Assistant in Surgery.
 J. Emmett Queen, M.D., Associate in Medicine.²
 Herbert E. Reifschneider, A.B., M.D., Associate in Surgery and Surgical Anatomy.
 Martin A. Robbins, M.D., Associate in Urology.²
 William M. Scabold, A.B., M.D., Associate in Pediatrics.
 Lawrence M. Serra, M.D., Associate in Medicine.
 Benedict Skitarelic, A.B., M.D., Associate in Pathology.
 Milchijah Spragins, B.S., M.D., Associate in Pediatrics.¹
 Edwin H. Stewart, Jr., M.D., Associate in Surgery.
 Raymond K. Thompson, B.S., M.D., Associate in Neurosurgery and Director of Neurological Research.
 Wilfred H. Townshend, Jr., A.B., M.D., Associate in Medicine.
 Isadore Tuerk, M.D., Associate in Psychiatry.
 William K. Waller, M.D., Associate in Medicine.
 Arthur Ward, M.D., Associate in Otolaryngology.
 Daniel Wilfson, Jr., A.B., M.D., Associate in Medicine.
 Austin H. Wood, M.D., Associate in Urology.
 John D. Young, Jr., M.D., Associate in Urology.¹
 Joseph B. Workman, A.B., M.D., Associate in Medicine.

Effective appointment dates: Associates

^{1d} May 1, 1952 to March 31, 1953.

⁵ Died Feb. 28, 1952.

^{6b} On military leave, Aug. 15, 1952.

LECTURERS

Harold E. Himwich, M.D., Lecturer in Physiology and Psychiatry.³
Amedeo S. Marrazzi, M.D., Lecturer in Pharmacology.
Joseph M. Miller, M.D., Lecturer in Surgery.
William H. Summerson, Ph.D., Lecturer in Biological Chemistry.
J. Henry Wills, Ph.D., Lecturer in Physiology.¹

INSTRUCTORS

A. Russell Anderson, M.D., Instructor in Psychiatry.
David Bacharach, A.B., M.D., Instructor in Dermatology.^{1c}
Ruth W. Baldwin, M.D., Instructor in Pediatrics and Director Pediatric Seizure Clinic.³
Jeanne Ann Barry, A.B., Junior Instructor in Physiology.
Harry McB. Beck, M.D., Instructor in Gynecology, and Assistant in Obstetrics.
Klaus W. Berblinger, M.D., Instructor in Psychiatry.^{1d, 3}
Joseph G. Bird, A.B., M.D., Instructor in Medicine.²
Melvin N. Borden, M.D., Instructor in Pediatrics.²
Thomas S. Bowyer, A.B., M.D., Instructor in Gynecology and Assistant in Obstetrics.
John T. Brackin, B.S., M.D., Instructor in Roentgenology.
George H. Brouillet, B.S., M.D., Instructor in Surgery.
Ann Virginia Brown, A.B., Instructor in Biological Chemistry.
J. E. Brumback Jr., B.S., M.D., Instructor in Ophthalmology.
William J. Bryson, A.B., M.D., Instructor in Pathology.
Bernard Burgin, A.B., M.D., Instructor in Medicine.²
Enoch Calloway, Jr., A.B., M.D., Instructor in Psychiatry.
Lester H. Caplan, M.D., Instructor in Pediatrics.¹
Joseph P. Cappuccio, D.D.S., Instructor in Oral Surgery, School of Dentistry.
John W. Chambers, M.D., Instructor in Neurosurgery, Assistant in Surgery.
Thomas A. Christensen, A.B., M.D., Instructor in Pediatrics.
Morris M. Cohen, M.D., Instructor in Dermatology.
Herbert B. Copeland, M.D., Instructor in Roentgenology.¹
Joseph M. Cordi, M.D., Instructor in Pediatrics.
John F. Cox, III, M.D., Instructor in Medicine.²
Robert M. N. Crosby, M.D., Instructor in Neurosurgery.²
Richard J. Cross, B.S., M.D., Instructor in Ophthalmology and Otolaryngology.
Raymond M. Cunningham, A.B., M.D., Instructor in Anatomy, Proctology and Pathology; Assistant in Surgery.
George H. Davis, B.S., M.D., Instructor in Obstetrics.
John R. Davis, M.D., Instructor in Medicine.
W. Allen Deckert, A.B., M.D., Instructor in Gynecology and Assistant in Surgery.
Michael L. DeVincentis, B.S., M.D., Instructor in Surgery.²
William A. Dodd, M.D., Instructor in Gynecology, and Assistant in Obstetrics.
Charles H. Doeller, Jr., A.B., M.D., Instructor in Gynecology and Assistant in Obstetrics.
William C. Duffy, A.B., M.D., Instructor in Gynecology.
Ernest S. Edlow, A.B., M.D., Instructor in Gynecology.
Maurice Feldman, Jr., A.B., M.D., Instructor in Medicine.
Edward G. Field, M.D., Instructor in Pediatrics.²

³ Resigned Sept. 4, 1951.

- Morris A. Fine, M.D., Instructor in Medicine.⁵
 William N. Fitzpatrick, M.D., Instructor in Psychiatry.^{2a, 1}
 Philip D. Flynn, M.D., Instructor in Medicine.
 Paul N. Friedman, A.B., M.D., Instructor in Ophthalmology.
 Joseph E. Furnari, M.D., Instructor in Medicine.
 Perry O. Futterman, A.B., M.D., Instructor in Medicine.
 L. Calvin Gareis, B.S., M.D., Instructor in Pathology and Obstetrics, Assistant in Gynecology.
 Richard M. Garrett, M.D., Instructor in Surgical Anatomy.²
 Jason H. Gaskel, M.D., Instructor in Orthopaedic Surgery.
 Howard Goodman, M.D., Instructor in Pediatrics.²
 Louis E. Goodman, M.D., Instructor in Surgery.
 H. L. Granoff, A.B., M.D., Instructor in Gynecology.
 Isaac Gutman, Instructor in Orthopaedic Surgery.
 Samuel J. Hankin, M.D. Instructor in Medicine.
 Charles W. Hawkins, M.D., Instructor in Anatomy.
 Mary L. Hayleck, M.D., Instructor in Pediatrics.
 Robert F. Healy, M.D., Instructor in Surgery.
 Donald B. Hebb, M.D., Instructor in Proctology and Assistant in Surgery and Thoracic Surgery.
 William G. Helfrich, B.S., M.D., Instructor in Medicine.
 L. Ann Hellen, B.S., Instructor in Medicine.
 Sylvia Himmelfarb, A.B., Instructor in Physiology.
 Mark B. Hollander, A.B., M.D., Instructor in Dermatology and Syphilology.
 DeWitt T. Hunter, Jr., B.S., M.D., Instructor in Anatomy.¹
 Calvin Hyman, M.D., Instructor in Surgery.
 Conrad L. Inman, D.D.S., Instructor in Anesthesiology, School of Dentistry.
 Marshall I. Kader, D.D.S., Instructor in Oral Surgery, School of Dentistry.
 Edward S. Kallins, B.S., M.D., Instructor in Medicine.
 William H. Kammer, Jr., A.B., M.D., Instructor in Medicine.
 Harry F. Kane, M.D., Instructor in Gynecology.
 Theodore Kardash, B.S., M.D., Instructor in Gynecology and Pathology.
 Clyde F. Karns, B.S., M.D., Instructor in Surgery.
 Irvin B. Kemick, B.S., Ph.G., M.D., Instructor in Medicine.
 Lauriston L. Keown, M.D., Instructor in Medicine.²
 Leon A. Kochman, M.D., Instructor in Medicine.
 Schuyler G. Kohl, B.S., M.D., Instructor in Obstetrics.
 Edward L. J. Kreig, M.D., Instructor in Pathology.
 A. Kremen, A.B., M.D., Instructor in Ophthalmology.
 Arnold F. Lavenstein, Instructor in Pediatrics.
 Algert P. Lazauskas, D.D.S., Instructor in Oral Surgery, School of Dentistry.
 Franklin E. Leslie, A.B., M.D., Instructor in Medicine.²
 F. Ford Loker, B.S., M.D., Instructor in Surgery.
 Helen I. Maginnis, M.D., Instructor in Gynecology.
 Charles B. Marek, M.D., Instructor in Gynecology.
 Marion W. Mathews, A.B., M.S., M.D., Instructor in Psychiatry.
 Robert E. McCafferty, B.S., M.S., Ph.D., Instructor in Anatomy.
 Francis J. McLaughlin, M.D., Instructor in Psychiatry.

⁵ Died June 4, 1952.

- D. J. McHenry, B.S., M.D., Instructor in Ophthalmology.⁶
 José Medina, D.D.S., Instructor in Oral Surgery, School of Dentistry.
 Israel P. Meranski, B.S., M.D., Instructor in Pediatrics.
 James P. Miller, M.D., Instructor in Orthopaedic Surgery.^{1a}
 Stanley Miller, B.A., M.D., Instructor in Medicine.^{1d}
 Donald W. Mintzer, M.D., Instructor in Medicine.²
 J. Duer Moores, B.S., M.D., Instructor in Surgery.
 William H. Mossberg, Jr., M.D., Instructor in Neurosurgery.¹
 Joseph E. Muse, Jr., B.S., M.D., Instructor in Medicine.
 Ruth Musser, M.S., Instructor in Pharmacology.
 John A. Myers, M.E.E., M.D., Instructor in Medicine, Assistant in Gastro-Enterology.
 James J. Nolan, B.S., M.D., Instructor in Medicine.
 Samuel Novey, M.D., Instructor in Psychiatry.
 John S. Osborne, M.D., Instructor in Medicine.
 Frank J. Otenasek, M.D., Instructor in Neuro-Surgery.
 Robert T. Parker, A.B., M.D., Instructor in Medicine.
 Samuel E. Proctor, A.B., M.D., Instructor in Surgery.
 James H. Ramsey, M.D., Instructor in Pathology.²
 Daniel R. Robinson, M.D., Instructor in Surgery.
 Robert C. Rodgers, M.D., Instructor in Pathology.^{1b, 3}
 John D. Rosin, A.B., M.D., Instructor in Proctology.¹
 Seymour W. Rubin, M.D., Instructor in Pathology.
 William J. Rysanek, Jr., M.D., Instructor in Gynecology.
 Clarence P. Scarborough, M.D., Instructor in Surgery.
 John F. Schaefer, B.S., M.D., Instructor in Surgery.
 Leonard Scherlis, B.S., M.D., Instructor in Medicine¹ and Pediatrics.
 J. King B. E. Seegar, Jr., A.B., M.D., Instructor in Obstetrics.
 Charles E. Shaw, M.D., Instructor in Medicine.
 Joseph C. Sheehan, B.S., M.D., Instructor in Gynecology.⁶
 Robert C. Sheppard, M.D., Instructor in Surgery.
 Jerome Sherman, M.D., Instructor in Medicine.
 Elizabeth D. Sherrill, M.D., Instructor in Medicine.
 E. Roderick Shipley, A.B., M.D., Instructor in Surgery.
 Albert J. Shochat, B.S., M.D., Instructor in Gastro-Enterology.
 George W. Smith, B.S., M.D., Instructor in Anatomy, Assistant in Neuro-Surgery.¹
 Ruby A. Smith, B.S., M.D., Instructor in Ophthalmology.
 Merrill J. Snyder, B.S., Instructor in Bacteriology.
 Nathan Snyder, Ph.G., M.D., Instructor in Anatomy.¹
 Stuart D. Sunday, M.D., Instructor in Medicine.
 William T. Supik, M.D., Instructor in Proctology.
 Virginia Suttentfield, M.D., Instructor in Psychiatry.²
 Robert B. Tunney, A.B., M.D., Instructor in Gynecology.
 Roy B. Turner, B.S., M.D., Instructor in Pathology, and Neuro-Anatomy.
 William D. VandeGrift, M.D., Instructor in Pathology.
 Edmond G. Vanden Bosche, D.D.S., Instructor in Oral Surgery School of Dentistry.
 Stephen J. Van Lill, III, A.B., M.D., Instructor in Medicine.
 Frederick J. Vollmer, B.S., M.D., Instructor in Medicine.
 Gladys E. Wadsworth, B.S., M.A., Instructor in Anatomy.
 Charles Herman Williams, M.D., Instructor in Medicine.

Frederick S. Wolf, M.D., Instructor in Neurology.

Harold L. Zupnick, M.D., Instructor in Surgery.²

ASSISTANTS

Robert C. Abrams, M.D., Assistant in Orthopaedic Surgery.

Fred B. Agee, M.D., Assistant in Medicine.

José A. Alvarez, M.D., Assistant in Neurological Surgery.

John J. Angelo, M.D., Assistant in Plastic Surgery.¹

A. Maynard Bacon, Jr., B.S., M.D., Assistant in Pediatrics.^{3b}

Nancy M. Balchun, Assistant in Art as Applied to Medicine.^{1b}

Harry McB. Beck, A.B., M.D., Assistant in Obstetrics.

Harold P. Biehl, M.D., Assistant in Surgery.

Joseph C. Blazek, A.B., M.D., Assistant in Medicine.^{1a}

Jane L. Bleakley, Assistant in Art as Applied to Medicine.

Jenifred S. Boehm, A.B., Assistant in Art as Applied to Medicine.^{3a}

Frances C. Brown, A.B., Assistant in Physiology.³

A. V. Buchness, A.B., M.D., Assistant in Surgery.

L. T. Chance, M.D., Assistant in Surgery.

James N. Cianos, M.D., Assistant in Surgery.

Raymond J. Clayton, Jr., Assistant in Art as Applied to Medicine.

Harry Cohen, B.S., M.D., Assistant in Obstetrics and Pathology.

Sarah Cook, A.B., M.D., Assistant Director Post Graduate Medicine and Assistant in Pediatrics.³

R. Adams Cowley, M.D., Assistant in Thoracic Surgery and Assistant Director Experimental Surgery.

Samuel H. Culver, M.D., Assistant in Surgery.

Martha Curtiss, B.S., R.N., Assistant in Medicine and Assistant Director, Medical Care Clinic.

E. Hollister Davis, A.B., M.D., Assistant in Anaesthesia.

Garrett E. Deane, M.D., Assistant in Pediatrics.^{1c}

Karl A. Dillinger, M.D., Assistant in Surgery.

William A. Dodd, B.S., M.D., Assistant in Obstetrics.

William C. Dunnigan, A.B., M.D., Assistant in Surgery.

Daniel Ehrlich, A.B., M.D., Assistant in Obstetrics.¹

Frank Fariano, A.B., M.D., Assistant in Thoracic Surgery.¹

Vincent dePaul Fitzpatrick, Jr., A.B., M.D., Assistant in Obstetrics.^{1d}

Marjorie R. Fleitzer, M.S.S., Assistant in Psychiatric Social Work.

Joseph B. Ganey, M.D., Assistant in Surgery.^{1c}

William R. Geraghty, B.S., M.D., Assistant in Surgery.

Charles Richard Gilbert, M.D., Assistant in Gynecology.^{1c}

Marvin Goldstein, A.B., M.D., Assistant in Medicine.

Effective appointment dates: Instructors.

^{1a} Oct. 23, 1951.

^{2a} January 1, 1952.

^{1b} Sept. 1, 1951.

^{1c} Oct 1, 1951.

^{1d} Apr. 1, 1952.

^{3a} Resigned Jan. 31, 1952.

^{3b} Resigned June 3, 1952.

- Martin K. Gorten, A.B., M.D., Assistant in Pediatrics.¹
Angelina Guido, M.D., Assistant in Ophthalmology.¹⁰
Donald B. Hebb, A.B., M.D., Assistant in Surgery and Thoracic Surgery.
Frederick Heldrich, M.D., Assistant in Pediatrics.¹⁰
John H. Hirschfeld, M.D., Assistant in Otolaryngology.
Hermione Hunt Hawkins, M.A., Assistant in Clinical Psychology.
John A. Hightower, M.D., Assistant in Medicine.¹⁰
John V. Hopkins, M.D., Assistant in Orthopaedic Surgery.
Rollin C. Hudson, M.D., Assistant in Medicine.
Erwin R. Jennings, A.B., M.D., Assistant in Surgery.¹
Everett D. Jones, M.D., Assistant in Orthopaedic Surgery.
Arthur Kandel, M.S., Assistant in Clinical Psychology.
Vernon C. Kelley, A.B., M.D., Assistant in Obstetrics.
August Kiel, Jr., M.D., Assistant in Neurological Surgery.¹
Irvin P. Klemkowski, B.S., M.D., Assistant in Obstetrics.
Raymond M. Lauer, M.D., Assistant in Medicine.
Herbert Joseph Levickas, B.S., M.D., Assistant in Medicine.¹⁰
Alfred S. Lederman, Assistant in Gastro-Enterology.
Lee R. Lerman, M.D., Assistant in Dermatology.
Berton V. Lock, M.D., Assistant in Medicine.
W. Kenneth Mansfield, Jr., M.D., Assistant in Obstetrics.
Clarence W. Martin, M.D., Assistant in Obstetrics.
Fern E. MacAllister, B.S., M.D., Assistant in Psychiatry.
Joseph Charles Matcher, A.B., M.D., Assistant in Medicine.¹⁰
Howard B. McElwain, M.D., Assistant in Surgery.
James R. McNinch, A.B., M.D., Assistant in Surgery.¹
Thomas D. Michael, M.D., Assistant in Surgery¹⁰ and Otolaryngology.¹
Kirk Moore, M.D., Assistant in Surgery.¹
J. Carl Myers, M.D., Assistant in Medicine.¹
John C. Ozazewski, M.D., Assistant in Ophthalmology.
Sumner Malone Parham, M.D., Assistant in Obstetrics.¹⁰
Robert S. Penton, M.D., Assistant in Surgery.¹⁰
Harry P. Porter, M.D., Assistant in Otolaryngology.¹
Ross Z. Pierpont, M.D., Assistant in Surgery.
John M. Rehberger, M.D., Assistant in Otolaryngology.¹
James Russo, M.D., Assistant in Anaesthesiology.
Ernest Scher, M.D., Assistant in Obstetrics.¹¹
Benson C. Schwartz, M.D., Assistant in Obstetrics.¹
James H. Shell, Jr., B.S., M.D., Assistant in Obstetrics¹ and Gynecology.¹
O. Walter Spurrier, M.D., Assistant in Pediatrics.
Vesta May Stevens, M.S.S., Assistant in Psychiatric Social Work.
Thomas McClelland Stevenson, Assistant in Art as Applied to Medicine.
Clyde D. Thomas, Jr., M.D., Assistant in Surgery.¹
F. X. Paul Tinker, B.S., M.D., Assistant in Obstetrics.¹
T. J. Touhey, M.D., Assistant in Surgery.
Arnold Tramer, B.S., M.D., Assistant in Pediatrics.¹
Thomas C. Webster, B.S., M.D., Assistant in Obstetrics.¹
William Earl Weeks, M.D., Assistant in Pediatrics.
Jack Wexler, A.B., M.D., Assistant in Medicine.

J. Carlton Wich, B.S., M.D., Assistant in Pediatrics.
 Marcella Wiseman, M.S.S., Assistant in Psychiatric Social Work.
 Geraldine F. Wolfe, B.S., M.S., Assistant in Anatomy.
 Thomas Worsley, M.D., Assistant in Medicine.

RESEARCH ASSOCIATES

V. V. Brunst, Sc.D., Nat. Ins. of Health Research Associate in Anatomy.
 Kenneth F. Clute, M.D., P.H.S. and M & R Fund Research Associate in Pediatrics and Legal Medicine.^{1a}
 Betty J. Fax, Ph.D., Navy Psychiatric Research Fund Research Associate in Psychiatry.
 Ernest C. Herrmann, Jr., B.S., Atomic Energy Commission Research Associate in Bacteriology.^{1b}
 Moritz Michaelis, Ph.D., Army Chemical Center Research Associate in Psychiatry.
 John Walker Powell, Ph.D., Army Chemical (Center and Bressler Reserve Fund Research Associate in Psychiatry).²
 Nancy V. Reid, B.S., M.S., Ph.D., Bressler Reserve Fund Research Associate in Psychiatry.

FELLOWS

Frederick K. Bell, Ph.D., Fellow in Pharmacology.
 Brigitte E. Blankenhorn, B.A., U. S. P. H. Service Research Fellow in Physiology.¹¹
 Francis J. Borges, M.D., Fellow in Medicine (part-time).¹
 Leonard S. Brahen, B.S., M.S., Fellow in Pharmacology.
 Joseph B. Bronushas, M.D., Fellow in Medicine (part-time).¹
 Mary Frances Byrd, A.B., Fellow in Pharmacology.¹⁴
 Ruth Page Edwards, A. B., A. M. Ph.D., Fellow in Psychology.^{1a, 1}
 Richard F. C. Egan, M.S., John F. B. Weaver Fellow in Physiology.^{2a}
 William G. Esmond, B.S., M.D., Baltimore Rh Typing Laboratory Fellow in Medicine.¹
 Mary S. Fassel, A.B., Fellow in Pharmacology.
 Joseph C. Fitzgerald, M.D., Fellow in Medicine (part-time).¹
 Vernon M. Gelhaus, John F. B. Weaver Fellow in Anatomy.^{2a}
 Alvin Nathan Geser, B.S., Bressler Reserve Fund Fellow in Biological Chemistry.^{1a, 2b}
 Martin K. Gorten, M.D., Baltimore Rh Typing Laboratory Fellow in Medicine.
 Calvin Y. Hadidian, A.B., M.D., Hitchcock Fellow in Thoracic Surgery.¹
 John B. Harmon, B.S., Emerson Fellow in Pharmacology.^{1b, 2a}
 Dorothy H. Hubbard, A.B., M.S., Ph.D., Research Corporation and Bressler Reserve Fund Post Doctorate Fellow in Biological Chemistry.²
 Marvin Jaffee, M.D., Fellow in Psychiatry.
 Theodore Kardash, B.S., M.D., Research Fellow in Gynecological Pathology.

Effective appointment date: Assistants.

^{1a} Oct. 1, 1951.

^{1b} Feb. 1, 1952.

^{1c} Jan. 1, 1952.

^{1d} Sept. 1, 1951.

^{1e} Oct. 22, 1951.

^{1f} Oct. 1, 1951.

Effective appointment dates, Research Associates.

^{1a} Feb. 1, 1952.

^{1b} Jan. 7, 1952.

Frederick Go-Kiatsu, B.S., M.D., Fellow in Pediatrics.
 Gerald Kessler, B.S., Nutrition Foundation Fellow in Biological Chemistry.
 August Kiel, Jr., M.D., Hitchcock Fellow in Neurosurgery.¹ⁱ
 Johnson S. L. Ling, A.B., M.S., Eli Lilly Fellow in Pharmacology.*
 Go Lu, M.D., Fellow in Pharmacology.^{1g}
 Pomeroy Nichols, Jr., M.D., Fellow in Neurosurgery.³
 Armando Ortiz, M.D., Fellow in Neurosurgery.^{1o}
 George C. Peck, A.B., John F. B. Weaver Fellow in Anatomy.^{1a}
 Henry D. Perry, Jr., M.D., Fellow in Medicine (part-time).^{1j}
 Gerardo B. Polanco, M.D., National Cancer Institute Trainee in Pathology.
 Alfred Joseph Pratt, B.S., John F. B. Weaver Fellow in Physiology.^{1d}
 Aubrey Richardson, M.D., Fellow in Medicine (part-time).¹
 Arthur H. Schmale, Jr., M.D., National Institute of Mental Health Fellow in Psychiatry.^{1b}
 Joseph E. Shuman, Fellow in Infectious Diseases.^{1k}
 Robert T. Singleton, Fellow in Infectious Diseases.^{1k}
 Thomas A. Stebbins, A.B., Medical Illustrator in Oncology and Gynecology. P.H.S. Cancer Teaching Program.
 Virginia Suttentfield, M.D., Fellow in Psychiatry.^{3a}
 Kyle W. Swisher, Jr., M.D., Fellow in Medicine (part-time).¹
 Roy B. Turner, M.D., Fellow in Neurosurgery.
 Frank D. Vasington, A.B., M.S., Bressler Reserve Fund Fellow in Biological Chemistry.¹
 Robert T. Walker, M.D., Fellow in Medicine.
 Annemarie Weber, U.S.P.H., Fellow in Physiology.³
 Elizabeth A. Winiarz, M.D., Fellow in Psychiatry.^{1m}
 Joseph B. Workman, A. B., M.D., Research Fellow in Medicine.

CONSULTANTS

Robert W. Swain, B.S., Consultant in Radiologic Physics.^{1a}
 Gordon Leslie Lippitt, B.S., M.A., M.D., Consultant in Psychiatry.^{1b}

Effective appointment dates; Fellows.

^{1a} June 1 to Aug. 31, 1952.

^{1b} June 1, 1952 to May 31, 1953.

^{1c} Nov. 1, 1951.

^{1d} Oct. 1, 1951.

^{1e} Sept. 1, 1951.

^{1f} Jan. 1, 1952.

^{1g} Sept. 1, 1952 to Aug. 31, 1953.

^{1h} Sept. 1, 1952 to Aug. 31, 1953.

¹ⁱ Jan. 1 to June 30, 1952.

^{1j} Jan. 1 to June 30, 1953.

^{1k} June 1 to Aug. 15, 1952.

^{1l} July 1 to Aug. 31, 1952.

^{1m} Sept. 15, 1951.

³ Resigned.

^{3a} Resigned Sept. 14, 1951.

^{3b} Resigned Nov. 30, 1951.

^{3c} Resigned Aug. 31, 1952.

* Half time.

Effective appointment dates: Consultants.

^{1a} Oct. 1, 1951.

^{1b} Oct. 22, 1951.

RESEARCH ASSISTANTS

Elizabeth Anne Adams, Bressler Reserve Fund Research Assistant in Psychiatry.^{1a}
 Maryanne E. Berger, Research Assistant in Anatomy.^{1k}
 Bernard D. Blaustein, B.S., M.A., Research Assistant in Legal Medicine.^{1b}
 Abraham B. Brody, A.B., A.M., Ph.D., Research Assistant in Psychiatry.^{1o}
 Catherine S. Brunst, A.B., Research Assistant in Anatomy.
 Delma Phelps Decsi, B.A., Research Assistant in Biological Chemistry.^{3a}
 José Cecilio Echiandia, Research Assistant in Medicine.^{1a}
 Arthur J. Fisk, B.S., Research Assistant in Legal Medicine.^{1b}
 Ella Freytag, Research Assistant in Legal Medicine.¹
 Jean D. Gardenier, A.B., Research Assistant in Biological Chemistry.
 Awilda Gay, B.S., Research Assistant in Medicine.^{1a}
 Joseph J. Geller, M.D., Research Assistant in Psychiatry.^{1f}
 Eleanor G. B. Glinos, A.B., Research Assistant in Biological Chemistry.^{1d}
 Carolyn F. Hendrickson, B.S., Research Assistant in Physiology.^{1d, 1}
 June E. Hunt, Research Assistant in Psychiatry.^{1g}
 Norma Mary Keigler, B.S., Research Assistant in Bacteriology.¹ⁱ
 Joseph B. Margolin, Research Assistant in Psychiatry.^{1f}
 Anne McNicholas Laster, A.B., Bressler Reserve Fund Research Assistant in Pediatrics.
 Doris H. Markley, A.B., Research Assistant in Psychiatry.^{1p}
 Jack H. Mendelson, Research Assistant in Psychiatry.^{1j}
 Irwin H. Moss, A.B., Research Assistant in Medicine.¹¹
 Dorothy M. Peterson, Research Assistant in Medicine.^{1a}
 Edwin L. Poole, B.S., Research Assistant in Psychiatry.¹
 Jeannette F. Rayner, Research Assistant in Psychiatry.
 Mary V. Reed, A.B., A.M., Research Assistant in Bacteriology.¹
 Elizabeth R. Steele, A.B., Research Assistant in Anatomy.^{3a, 1a}
 Patricia S. Thorpe, B.A., Research Assistant in Biological Chemistry.^{1r}
 Barbara Elizabeth Todd, A.B., Research Assistant in Psychiatry.^{1a}
 Albert L. Trucker, A.B., Bressler Reserve Fund Research Assistant in Pediatrics.^{1a}

Effective appointment dates: Research Assistants.

^{1a} June 8 to Sept. 17, 1952.

^{1b} May 19 to Sept. 18, 1952.

^{1c} Dec. 1, 1951 to Aug 31, 1952.

^{1d} April 1, 1951.

^{1e} Sept. 10, 1951.

^{1f} June 2 to June 21, 1952.

^{1g} June 9, 1952 to June 30, 1953.

^{1h} Feb. 15, 1952.

¹ⁱ June 1 to Aug. 31, 1952.

^{1k} June 16 to Sept. 15, 1952.

¹¹ June 1 to Sept. 15, 1952.

^{1m} Apr. 15, 1952.

¹ⁿ Feb. 11, 1952.

^{1o} June 9 to Aug. 16, 1952.

^{1p} Aug. 1, 1952.

^{1q} July 1, 1952 to Jan. 31, 1953 (part time).

^{1r} June 8 to Sept. 17, 1952.

^{3a} Resigned Apr. 15, 1952.

Frank D. Vasington, B.S., M.S., Bressler Reserve Fund Research Assistant in Biological Chemistry.¹

Floris de Balbian Verster, B.S., Research Assistant in Psychiatry.¹

Herbert C. Wagner, Research Assistant in Anatomy.^{1a}

Margaret Lucille Ward, A.B., M.SS., Research Assistant in Pediatrics.³

Amy Lee Wells, R.N., Research Assistant in Gynecological Pathology.

Priscilla Rae Wilson, A.B., Research Assistant in Anatomy.

Robert C. Wood, B.A., M.S., Bressler Reserve Fund Research Assistant in Bacteriology.¹

Richard A. Young, M.D., Research Assistant in Pediatrics.³

^{1a} July 1 to Aug. 31, 1952.

UNIVERSITY HOSPITAL

GEORGE H. BUCK, *Director*
 JAMES L. DACK, *Asst. Director*
 KURT H. NORK, *Asst. Director*

EXECUTIVE COMMITTEE OF THE STAFF

EDWARD F. COTTER, *Chairman*
 FRANCIS G. DICKEY, *Secretary-Treasurer*

J. EDMUND BRADLEY	WALTER L. KILBY
LOUIS H. DOUGLASS	F. EDWIN KNOWLES, JR.
CHARLES REID EDWARDS	MAURICE C. PINCOFFS
JACOB E. FINESINGER	MILTON S. SACKS
J. MASON HUNDLEY, JR.	GEORGE H. YEAGER

<i>Elected Members</i>	<i>Term Expires</i>
JAMES G. ARNOLD, JR.....	1952
ERNEST I. CORNBROOKS, JR.....	1952
EVERETT G. DIGGS.....	1953
WILLIAM G. HELFRICH.....	1953
HARRY C. BOWIE.....	1954
W. Kennedy Waller.....	1954
GEORGE H. BUCK, <i>Director, University Hospital</i>	} <i>Ex officio members</i>
H. BOYD WYLIE, <i>Dean, School of Medicine</i>	

UNIVERSITY HOSPITAL STAFF

Physician-in-Chief.....MAURICE C. PINCOFFS

	(THOMAS P. SPRUNT
		T. NELSON CAREY
		LOUIS A. M. KRAUSE
		WILLIAM S. LOVE, JR.
		MILTON S. SACKS
		LEWIS P. GUNDRY
		THEODORE E. WOODWARD
<i>Physicians</i>		EDWARD F. COTTER
		EPHRAIM T. LISANSKY
		SAMUEL T. R. REVELL, JR.
		HOWARD M. BUBERT
		SAMUEL MORRISON
		FRANK J. GERAGHTY
		JAMES R. KARNES
		C. EDWARD LEACH

	(IRVING J. SPEAR
		LEON FREEDOM
<i>Neurologists</i>		WILLIAM L. FEARING
		EDWARD F. COTTER
		GEORGE G. MERRILL

Dermatologist-in-Chief..... HARRY M. ROBINSON, SR.

UNIVERSITY HOSPITAL STAFF—*Cont'd.*

<i>Dermatologists</i>	{ FRANCIS A. ELLIS HARRY M. ROBINSON, JR. A. ALBERT SHAPIRO ISRAEL ZELIGMAN EUGENE S. BERESTON
<i>Psychiatrist-in-Chief</i>	JACOB E. FINESINGER
<i>Psychiatrists</i>	{ H. WHITMAN NEWELL KATHRYN L. SCHULTZ EPHRIAM T. LISANSKY MAURICE H. GREENHILL GEORGE F. SUTHERLAND
<i>Pediatrician-in-Chief</i>	J. EDMUND BRADLEY
<i>Pediatricians</i>	{ C. LORING JOSLIN GORDON E. GIBBS A. H. FINKELSTEIN WILLIAM M. SEABOLD ANNIE M. BESTEBREURTJE
<i>Pathologist-in-Chief</i>	HUGH R. SPENCER
<i>Pathologists</i>	{ DEXTER L. REIMANN JOHN A. WAGNER
<i>Surgeon-in-Chief</i>	CHARLES REID EDWARDS
<i>Surgeons</i>	{ GEORGE H. YEAGER OTTO C. BRANTIGAN CHARLES A. REIFSCHNEIDER HARRY C. HULL
<i>Neurological Surgeon-in-Chief</i>	JAMES G. ARNOLD, JR.
<i>Neurological Surgeons</i>	{ RICHARD G. COBLENTZ RAYMOND K. THOMPSON
<i>Laryngologist-in-Chief</i>	EDWARD A. LOOPER
<i>Laryngologists</i>	{ THOMAS R. O'ROURK FREDERICK T. KYPER
<i>Proctologist-in-Chief</i>	MONTÉ EDWARDS
<i>Proctologist</i>	THURSTON R. ADAMS
<i>Orthopedic Surgeon-in-Chief</i>	ALLEN F. VOSHELL
<i>Orthopedic Surgeons</i>	{ MOSES GELLMAN HENRY F. ULLRICH MILTON J. WILDER JAMES P. MILLER
<i>Urologist-in-Chief</i>	W. HOUSTON TOULSON
<i>Urologists</i>	{ LYLE J. MILLAN HOWARD B. MAYS JOHN D. YOUNG MARTIN A. ROBBINS
<i>Dental Surgeon-in-Chief</i>	BRICE M. DORSEY

UNIVERSITY HOSPITAL STAFF—*Cont'd.*

	{ MYRON S. AISENBERG
	{ JOSEPH C. BIDDIX
	{ HAROLD GOLTON
	{ JOSEPH P. CAPPUCCIO
	{ EDWARD C. DOBBS
<i>Dentists</i>	{ GRAYSON W. GAVER
	{ HUGH T. HICKS
	{ CONRAD L. INMAN
	{ ERNEST B. NUTTALL
	{ KENNETH V. RANDOLPH
	{ WILBUR O. RAMSEY
<i>Roentgenologist-in-Chief</i>	WALTER L. KILBY
<i>Roentgenologists</i>	{ CHARLES N. DAVIDSON
	{ DONALD J. BARNETT
	{ JOHN M. DENNIS
<i>Bronchoscopist-in-Chief</i>	EDWARD A. LOOPER
	{ THOMAS R. O'ROURK
	{ FREDERICK T. KYPER
<i>Bronchoscopists</i>	{ JOHN H. HIRSCHFELD
	{ RICHARD J. CROSS ⁶
	{ ROSS C. BROOKS
	{ THOMAS D. MICHAEL
<i>Otologist-in-Chief</i>	THOMAS R. O'ROURK
<i>Obstetricians-in-Chief</i>	{ LOUIS H. DOUGLASS
	{ D. FRANK KALTREIDER
	{ J. MORRIS REESE
	{ ISADORE A. SIEGEL
	{ JOHN E. SAVAGE
	{ HUGH B. McNALLY
<i>Obstetricians</i>	{ D. McCLELLAND DIXON
	{ J. K. B. E. SEEGAR
	{ LOUIS C. GAREIS
	{ GEORGE H. DAVIS
	{ J. HUFF MORRISON
<i>Ophthalmologist-in-Chief</i>	F. EDWIN KNOWLES, JR.
<i>Ophthalmologist</i>	PAUL N. FRIEDMAN
	{ RUBY A. SMITH
<i>Assistant Ophthalmologists</i>	{ J. E. BRUMBACK
	{ JOHN C. OZAZEWSKI
<i>Gynecologist-in-Chief</i>	J. MASON HUNDLEY, JR.
	{ LEO BRADY
	{ BEVERLEY C. COMPTON
<i>Gynecologists</i>	{ WILLIAM K. DIEHL
	{ EVERETT S. DIGGS
	{ ERNEST I. CORNBROOKS, JR.
<i>Oncologist-in-Chief</i>	J. MASON HUNDLEY, JR.

UNIVERSITY HOSPITAL RESIDENT AND INTERN STAFF

July 1, 1952 to June 30, 1953

ROBERT K. ARTHUR, JR., B.S., M.D., *Assistant Resident in Obstetrics*
 CHARLES BAGLEY, III, B.S., M.D., *Assistant Resident in Psychiatry*
 WILLIAM W. BAIRD, B.S., M.D., *Assistant Resident in Gynecology*
 FRANCIS J. BORGES, B.S., M.D., *Co-Resident in Medicine*
 JOSEPH B. BRONUSHAS, B.S., M.D., *Assistant Resident in Medicine*
 JAMES S. BROWNE, M.D., *Assistant Resident in Neurosurgery: Mercy Hospital, July 1, 1952 to December 31, 1952; University Hospital, January 1, 1953 to June 30, 1953*
 DONALD B. CAMPBELL, M.D., *Assistant Resident in Obstetrics, assigned to Gynecology*
 OMANA CHERIYAN, B.S., M.B., *Assistant Resident in Pediatrics*
 SOLOMON COHEN, B.A., M.D., *Assistant Resident in Psychiatry*
 JAMES L. EAVEY, B.S., M.D., *Assistant Resident in Gynecology*
 ABRAHAM EISEN, B.A., M.D., *Assistant Resident in Obstetrics*
 FRANK FARAINO, B.S., M.D., *Resident in Thoracic Surgery*
 JOSEPH C. FITZGERALD, B.A., M.D., *Assistant Resident in Medicine*
 JAMES P. GALLAHER, A.B., M.D., *Assistant Resident in Obstetrics*
 F. SIDNEY GARDNER, JR., B.A., M.D., *Assistant Resident in Gynecology*
 MARTIN K. GORTEN, A.B., M.D., *Resident in Pediatrics*
 ANGELINA GUIDO, A.B., M.D., *Resident in Ophthalmology*
 JOHN R. HANKINS, B.A., M.D., *Assistant Resident in Surgery*
 ERWIN R. JENNINGS, A.B., M.D., *Co-Resident in Surgery*
 J. PAUL JOHNSON, JR., B.A., M.D., *Assistant Resident in Obstetrics*
 AUGUST KIEL, JR., M.D., *Assistant Resident in Neurosurgery: University Hospital, July 1, 1952 to December 31, 1952; Mercy Hospital, January 1, 1953 to June 30, 1953*
 HOWARD C. KRAMER, M.D., *Assistant Resident in Surgery*
 HENRY E. LANGENFELDER, B.A., M.D., *Assistant Resident in Surgery*
 CHARLES W. MCGRADY, JR., A.B., M.D., *Assistant Resident in Surgery*
 KATHLEEN R. MCGRADY, B.S., M.D., *Assistant Resident in Pediatrics*
 JAMES R. MCNINCH, JR., A.B., M.D., *Co-Resident in Surgery*
 WILLIAM M. MAGRUDER, B.S., M.D., *Resident in Psychiatry*
 ARLIE R. MANSBERGER, JR., *Assistant Resident in Surgery*
 GEORGE Y. MASSENBURG, M.D., *Assistant Resident in Surgery*
 P. GOVINDA MENON, B.S., M.B., *Assistant Resident in Pediatrics*
 RAUL MERCADO, JR., A.B., M.D., *Assistant Resident in Roentgenology*
 THOMAS D. MICHAEL, M.D., *Resident in Otolaryngology*
 EDUARDO MANUEL MORALES-VILÁ, B.S., M.D., *Assistant Resident in Obstetrics*
 WILLIAM A. NIERMANN, M.D., *Assistant Resident in Pediatrics*¹
 HENRY D. PERRY, JR., M.D., *Assistant Resident in Medicine*
 WILLIAM F. PETERSON, M.D., *Assistant Resident in Gynecology, assigned to Obstetrics*
 ALBERT M. POWELL, JR., M.D., *Assistant Resident in Pediatrics*²
 HOWARD F. RASKIN, A.B., M.D., *Assistant Resident in Medicine*
 HENRY G. REEVES, JR., B.S., MD., *Assistant Resident in Surgery*
 EUGENE B. REX, M.D., *Assistant Resident in Otolaryngology*
 AUBREY D. RICHARDSON, B.S., M.D., *Assistant Resident in Medicine*
 BENSON C. SCHWARTZ, M.D., *Resident in Obstetrics*
 ROGER D. SCOTT, M.D., *Assistant Resident in Surgery*
 ROY K. SKIPTON, B.S., M.D., *Assistant Resident in Obstetrics*

¹ October 1, 1952 to June 30, 1953.² October 20, 1952.

HENRY H. STARTZMAN, JR., M.D., *Resident in Roentgenology*
 KYLE Y. SWISHER, JR., M.D., *Co-Resident in Medicine*
 JOSÉ G. VALDERAS, M.D., *Co-Resident in Gynecology*
 LESLIE A. WALKER, JR., M.D., *Co-Resident in Gynecology*

ROTATING INTERNS

CHARLES B. ADAMS, JR., B.S., M.D.	RICHARD C. PACKERT, A.B., M.D.
BENJAMIN A. ADELSTEIN, B.A., M.D.	JOHN R. PRYOR, B.S., M.D.
GEORGE C. ALDERMAN, B.S., M.D.	GILBERTO RAMIREZ-SANTISTEBAN,
TIMOTHY D. BAKER, B.A., M.D.	B.S., M.D.
SAMUEL W. DEISHER, B.A., M.D.	DAVID S. RASMUSSEN-TAXDAL, M.D.
LEE W. ELGIN, JR., M.D.	JOHN O. SHARRETT, M.D.
MICHAEL J. FOLEY, A.B., M.D.	URSULA T. SLAGER, B.A., M.D.
L. FELIPE GONZALEZ, M.D.	GEORGE B. SMITH, JR., A.B., M.D.
WILLIAM R. GRECO, B.S., M.D.	GEORGE H. SMITH, A.B., M.D.
WILLIAM L. HEIMER, B.S., M.D.	CLARENCE E. STENNETT, B.S., M.D.
L. VIRGINIA HUNTER, B.A., M.D.	HARRY M. WALSH, B.S., M.D.
JOHN W. LOOPER, JR., M.D.	ALBERT J. WILDBERGER, A.B., M.D.
	DONALD A. WOLFEL, B.S., M.D.

INTERN IN PEDIATRICS

HERBERT L. ECKERT, B.S., M.D.

DENTAL INTERNS

JOHN P. BURNS, B.S., D.D.S. MAURICE E. HINDS, D.D.S.

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT STAFF

KURT H. NORK *Director*

<i>Chief of Medical Clinic</i>	MAURICE C. PINCOFFS
<i>Assistant Chief, Medical Clinic</i>	JOSEPH C. FURNARI
<i>Consultants</i>	T. NELSON CAREY
	EDWARD F. COTTER
	WILLIAM K. WALLER
	LOUIS V. BLUM
	KURT LEVY
	ALVIN HARTZ
	JAMES R. KARNS
	JONAS COHEN
	JOHN B. DEHOFF
	ROBERT E. BAUER
	CHARLES H. WILLIAMS
<i>Physicians</i>	STEPHEN VAN LILL, III
	CHARLES E. SHAW
	JOSEPH G. BIRD
	DONALD MINTZER
	HERBERT LEVICUS
	CHARLES BLAZEK
	HENRY W. HOLLJES
	JOSEPH C. WORKMAN
	ROBERT T. PARKER
	WILLIAM F. COX, III

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*cont'd.*

<i>Chief of Gastro-Enterology Clinic</i>	FRANCIS G. DICKEY
<i>Assistant Gastro-Enterologist</i>	{ Z. VANCE HOOPER ALBERT J. SHOCHAT
<i>Chief of Neurology Clinic</i>	LEON FREEDOM
<i>Assistant Neurologists</i>	{ WILLIAM L. FEARING HARRY A. TEITELBAUM
<i>Chief of Chest Clinic</i>	MEYER W. JACOBSON
<i>Assistant, Diseases of the Lungs</i>	MANUEL LEVIN
<i>Assistants</i>	{ CHARLES E. SHAW JOSEPH G. BIRD PERRY O. FUTTERMAN
<i>Chief of Cardiovascular Clinic</i>	C. EDWARD LEACH
<i>Assistant Cardiologists</i>	{ WILFRED H. TOWNSEND ROLLIN C. HUDSON SIDNEY SCHERLIS STEPHEN J. VAN LILL, III JAMES J. NOLAN
<i>Chief of Allergy Clinic</i>	HOWARD M. BUBERT
<i>Assistant Chiefs of Allergy Clinic</i>	{ IRVIN B. KEMICK JEROME SHERMAN
<i>Assistant Allergists</i>	{ EDWARD S. KALLINS RAYMOND M. LAUER
<i>Chief of Endocrinology Clinic</i>	CONRAD B. ACTON
<i>Director of Dermatology and Syphilis Clinic</i>	HARRY M. ROBINSON, SR.
<i>Chief of Dermatology and Syphilis Clinic</i>	HARRY M. ROBINSON, JR.
<i>Dermatologists and Syphilologists</i>	{ FRANCIS A. ELLIS ISRAEL ZELIGMAN A. ALBERT SHAPIRO R. C. V. ROBINSON EUGENE S. BERESTON WILLIAM R. BUNDICK
<i>Assistant Dermatologists and Syphilologists</i>	{ MORRIS M. COHEN MARK B. HOLLANDER LEE R. LERMAN
<i>Chief of the Arthritis Clinic</i>	LEON A. KOCHMAN
<i>Director of Psychiatric Clinic</i>	MAURICE H. GREENHILL
<i>Director of Child Guidance Clinic</i>	H. WHITMAN NEWELL

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*Cont'd.*

	{ KATHRYN L. SCHULTZ
	{ HANS W. LOEWALD
	{ EPHRIAM LISANSKY
	{ ISADORE TUERK
	{ RUDOLPH MARBURG
	{ SAM NOVEY
	{ G. S. INGALLS
<i>Assistant Psychiatrists</i>	{ LEON FERBER
	{ GERTRUDE GROSS
	{ ENOCH GALLAWAY, III
	{ WILLIAM N. FITZPATRICK
	{ MARION MATHEWS
	{ MARVIN JAFFE
	{ VIRGINIA SUTTONFIELD
	{ GEORGE F. SUTHERFIELD
	{ MANFRED S. GUTTMACHER
<i>Chief Roentgenologist</i>	WALTER L. KILBY
<i>Roentgenologists</i>	{ CHARLES N. DAVIDSON
	{ DONALD J. BARNETT
	{ JOHN M. DENNIS
<i>Director, Pediatric Clinic</i>	A. H. FINKELSTEIN
<i>Chief of Pediatric Clinic</i>	SAMUEL S. GLICK
	{ ARNOLD F. LAVENSTEIN
	{ THOMAS E. WEEKS
	{ J. CARLTON WICH
	{ HOWARD GOODMAN
<i>Assistant Pediatricians</i>	{ MELVIN N. BORDEN
	{ LESTER CAPLAN
	{ RUTH B. BALDWIN
	{ EDWARD FIELD
	{ GAITET E. DEANE
	{ FREDERICK HELDRICH
<i>Director, Pediatric Cardiac Clinic</i>	SIDNEY SCHERLIS
<i>Assistant Director, Pediatric Cardiac Clinic</i>	GIBSON J. WELLS
<i>Assistant Pediatrician, Cardiac Clinic</i>	MARY HAYLECK
<i>Director, Pediatric Seizure Clinic</i>	RUTH B. BALDWIN
<i>Director, Pediatric Chest Clinic</i>	LOUIS V. BLUM
<i>Director, Developmental Clinic</i>	ANNIE M. BESTEBREURTJE
<i>Chief of Surgical Clinic</i>	ROBERT C. SHEPPARD
	{ SAMUEL E. PROCTOR
	{ WILLIAM B. SETTLE
<i>Assistant Surgeons</i>	{ KARL F. MECH
	{ JAMES N. CIANOS
	{ WILLIAM D. LYNN
	{ DAVID R. WILL
<i>Chief of Plastic Surgery</i>	EDWARD A. KITLOWSKI

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*Cont'd.*

<i>Chief of Orthopedic Surgery Clinic</i>	ALLEN FISKE VOSHELL
	{ MOSES GELLMAN
	{ HENRY F. ULLRICH
	{ MILTON J. WILDER
	{ JAMES P. MILLER
<i>Assistant Orthopedic Surgeons</i>	{ ROBERT C. ABRAMS
	{ EVERETT D. JONES
	{ JOHN J. TANSEY
	{ WILLIAM T. KERNAHAN, JR.
	{ ROBERT T. STANG
<i>Chief of Urology Clinic</i>	W. HOUSTON TOULSON
	{ JOHN F. HOGAN
	{ LYLE J. MILLAN
<i>Assistant Urologists</i>	{ HOWARD B. MAYS
	{ JOHN D. YOUNG, JR.
	{ MARTIN A. ROBBINS
<i>Chief of Otolaryngology Clinic</i>	BENJAMIN S. RICH
	{ SAMUEL L. FOX
<i>Otolaryngologists</i>	{ RICHARD J. CROSS ⁶
	{ THOMAS D. MICHAEL
<i>Chief of Proctology Clinic</i>	MONTÉ EDWARDS
	{ THURSTON R. ADAMS
	{ DONALD B. HEBB
<i>Assistant Proctologists</i>	{ WILLIAM J. SUPIK
	{ RAYMOND CUNNINGHAM
	{ JOHN D. ROSIN
<i>Chief of Gynecology Clinic</i>	J. MASON HUNDLEY, JR.
<i>Assistant Chief of Gynecology Clinic</i>	BEVERLEY C. COMPTON
	{ WILLIAM K. DIEHL
	{ EVERETT S. DIGGS
	{ ERNEST I. CORNBROOKS, JR.
<i>Assistant Gynecologists</i>	{ W. ALLEN DECKERT
	{ HELEN I. MAGINNIS
	{ CHARLES B. MAREK
	{ THEODORE KARDASH
	{ J. MASON HUNDLEY, JR.
	{ BEVERLEY C. COMPTON
<i>Female Cystoscopists</i>	{ WILLIAM K. DIEHL
	{ ERNEST I. CORNBROOKS, JR.
	{ EVERETT S. DIGGS
<i>Chief of Dental Clinic</i>	BRICE M. DORSEY
<i>Assistant Chief of Dental Clinic</i>	JOSEPH P. CAPPUCCIO

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*Cont'd.*

<i>Chief of Obstetrical Clinic</i>	J. HUFF MORRISON
<i>Assistant Chief of Obstetrical Clinic</i>	MARGARET B. BALLARD
	J. K. B. E. SEEGAR
	CHARLES H. DOELLER, JR.
	GEORGE H. DAVIS
	THEODORE KARDASH
	HARRY McB. BECK
	WILLIAM A. DODD
	IRVIN P. KLEMKOWSKI
<i>Assistant Obstetricians</i>	CLARENCE W. MARTIN
	VERNON C. KELLY
	HARRY COHEN
	THOMAS C. WEBSTER
	VINCENT DEP. FITZPATRICK
	ERNEST SCHER
	JAMES H. SHELL, JR.
	F. X. PAUL TINKER
	DANIEL EHRLICH
<i>Chief of Oncology Clinic, Gynecological Division</i>	J. MASON HUNDLEY, JR.
	BEVERLEY C. COMPTON
<i>Assistants in Gynecological Division</i>	WILLIAM K. DIEHL
	ERNEST I. CORNBROOKS, JR.
	EVERETT S. DIGGS
	ARTHUR G. SIWINSKI
<i>Assistants in Surgical Division</i>	E. EUGENE COVINGTON
	J. DUER MOORES
	EDWIN H. STEWART, JR.
	LOUIS E. GOODMAN
<i>Chief of Vascular Clinic</i>	GEORGE H. YEAGER
<i>Assistant Chief of Vascular Clinic</i>	RAYMOND CUNNINGHAM
<i>Medical Consultant—Vascular Clinic</i>	LEWIS P. GUNDRY
<i>Chief of Ophthalmology Clinic</i>	F. EDWIN KNOWLES, JR.
	PAUL N. FRIEDMAN
<i>Assistant Ophthalmologists</i>	RUBY A. SMITH
	D. J. MCHENRY ⁶
	J. E. BRUMBACK, JR.
	RICHARD J. CROSS ⁶
	JOHN C. OZAZEWSKI
<i>Professor of Speech</i>	RAY EHRENSBERGER, Ph.D.
<i>Associate Professor of Speech, University of Maryland at College Park</i>	MERLE ANSBERRY, Ph.D.

OUT-PATIENT REPORT JANUARY 1, 1951 TO JANUARY 1, 1952

<i>Departments</i>	<i>New Cases</i>	<i>Old Cases</i>	<i>Total</i>
Allergy.....	133	4,855	4,988
Arthritis.....	33	282	315
Cardiology.....	157	1,311	1,468
Cystoscopy (Gyn).....	92	470	562
Cystoscopy (G.U.).....	67	153	220
Dermatology.....	1,959	4,995	6,954
Dep't "S".....	651	5,075	5,726
Diabetic.....	86	1,574	1,660
Ear, Nose & Throat.....	1,017	1,741	2,758
Endocrine.....	22	276	298
Eye.....	1,090	3,261	4,351
Gastro Intestinal.....	191	781	972
Genito Urinary.....	594	1,729	2,325
Gynecology.....	1,510	4,961	6,471
Hematology.....	35	401	436
Medicine.....	1,907	6,993	8,900
Neurology.....	87	377	464
Neuro Surgery.....	163	439	602
Obstetrics.....	1,531	14,923	16,454
Occupational Therapy.....	61	1,377	1,438
Oncology.....	263	1,767	2,030
Oral Surgery.....	223	590	813
Orthopedic.....	1,180	3,032	4,212
Pediatric.....	2,491	7,962	10,453
Pediatric Cardiology.....	38	239	277
Pediatric Chest.....	5	347	352
Pediatric Seizure.....	64	399	463
Physical Therapy.....	137	1,725	1,862
Plastic Surgery.....	20	25	45
Proctology.....	154	378	532
Psychiatry.....	207	2,432	2,639
Surgery.....	2,813	7,724	10,537
Tuberculosis.....	225	1,319	1,544
Vascular.....	96	556	652
Total.....	19,301	84,441	103,742

MEDICAL CARE CLINIC

UNIVERSITY HOSPITAL

Director.....HENRY W. D. HOLLJES
Assistant Director.....MARTHA CURTIS

The Medical Care Clinic of the University of Maryland is the result of a study by the Medical and Chirurgical Faculty of Maryland in cooperation with the State Planning Commission. The present Clinic, located on the third floor of

the Dispensary Building, is the first of its kind in this country. Public assistance clients are referred to the Clinic by the Baltimore City Health Department and are scheduled for an initial physical examination by physicians affiliated with the University of Maryland. A family physician is chosen by the patient from a list available at the Clinic. Copies of the individual's medical history and examinations are sent to the physician selected, who then becomes responsible for the medical care of the patient.

The Medical Care Program is, in this way, an entirely new approach to the problem of the indigent patient. For the first time, he becomes the responsibility of a private physician. This places the practice of medicine to the indigent on a par with the practice of private medicine.

After the initial examination, the Clinic functions as a diagnostic center to serve the needs of the neighborhood practitioner. Consultants working in the Medical Care Clinic are available and at present represent Medicine, Surgery, Gynecology and Otolaryngology. Others will be added as required.

The Clinic functions between 8:30 and 4:30 daily. Registrations and referrals are conducted in the morning. Clinical examinations and consultations are held during the afternoon. Approximately eighty neighborhood physicians have agreed to work with the Medical Care Program. Twenty-five members of the Out-patient Department and University Hospital Staff will conduct examinations in the Clinic.

The Faculty Committee on Post Graduate Education has also undertaken plans to provide instruction to all affiliated physicians.

4,606 public assistance clients have been assigned to this Clinic.

MERCY HOSPITAL

BOARD OF GOVERNORS

WALTER D. WISE, *Chairman*

MOTHER M. BERNADETTE

SISTER M. VERONICA

SISTER M. CARMEL

SISTER M. ELLEN MARIE

SISTER M. FRANCES LOUISE

SISTER M. DAMIAN

SISTER M. THOMAS

SISTER M. BRENDAN

HENRY F. BONGARDT

H. RAYMOND PETERS

MAURICE C. PINCOFFS

DANIEL J. PESSAGNO

EDWARD P. SMITH

ELLIOTT H. HUTCHINS

ADVISORY BOARD OF MERCY HOSPITAL

MOST REVEREND LAWRENCE J. SHEEHAN

HENRY C. EVANS

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WILLIAM L. GALVIN

AUGUST B. HANEKE

SAMUEL H. HOFFBERGER

JAMES W. McELROY

ALLEN W. MORTON

S. PAGE NELSON

THOMAS W. PANGBORN

WILLIAM F. SCHMICK

MERCY HOSPITAL STAFF

<i>Surgeon-in-Chief</i>	WALTER D. WISE
	{ ELLIOTT H. HUTCHINS
	{ D. J. PESSAGNO
	{ F. L. JENNINGS
<i>Surgeons</i>	{ R. W. LOCHER
	{ THOMAS R. CHAMBERS
	{ WILLIAM F. RIENHOFF
	{ HENRY F. BONGARDT
<i>Neurological Surgeon-in-Chief</i>	CHARLES BAGLEY, JR.
	{ RICHARD B. COBLENTZ
	{ JAMES D. ARNOLD, JR.
<i>Neurological Surgeons</i>	{ FRANK J. OTENASEK
	{ JOHN W. CHAMBERS
	{ RAYMOND K. THOMPSON
	{ I. O. RIDGELY
	{ JAMES W. NELSON
	{ HOWARD B. McELWAIN
<i>Associate Surgeons</i>	{ SIMON H. BRAGER
	{ JOHN A. O'CONNOR
	{ CHARLES W. MAXSON
	{ I. RIDGEWAY TRIMBLE
	{ RAYMOND F. HELFRICH
	{ JULIUS GOODMAN
	{ S. DEMARCO, JR.
	{ T. J. TOUHEY
	{ WILLIAM N. McFAUL, JR.
	{ MEYER H. ZURAVIN
	{ HOWARD L. ZUPNIK
	{ DANIEL R. ROBINSON
	{ JOSEPH V. JERARDI
<i>Assistant Surgeons</i>	{ WM. C. DUNNIGAN
	{ HAROLD H. BURNS
	{ WILLIAM L. GARLICK
	{ JOHN F. SCHAEFFER
	{ F. FORD LOKER
	{ PATRICK C. PHELAN, JR.
	{ MICHAEL L. DEVINCENTIS
	{ HAROLD P. BIEHL
	{ KIRK MOORE
<i>Thoracic Surgeon-in-Chief</i>	WILLIAM L. GARLICK
<i>Plastic Surgeons</i>	{ EDWARD A. KITLOWSKI
	{ CLARENCE P. SCARBOROUGH
<i>Ophthalmologist-in-Chief</i>	F. EDWIN KNOWLES, JR.
<i>Associate Ophthalmologist</i>	JOSEPH V. JEPPI
	{ M. RASKIN
<i>Associate Ophthalmologists and Otolologists</i>	{ JOSEPH I. KEMLER
	{ F. A. PACIENZA

MERCY HOSPITAL STAFF—*Cont'd.*

<i>Consulting Rhinologists and Laryngologists</i>	{ W. RAYMOND MCKENZIE GEORGE W. MITCHELL
<i>Rhinologist and Laryngologist-in-Chief</i>	WAITMAN F. ZINN
	{ FAYNE A. KAYSER BENJAMIN S. RICH
<i>Associate Rhinologists and Laryngologists</i>	{ THEODORE A. SCHWARTZ BENJAMIN H. ISAACS ARTHUR WARD
<i>Assistant Rhinologist and Laryngologist</i>	{ JOHN M. REHBERGER HARRY P. PORTER
<i>Bronchoscopist-in-Chief</i>	WAITMAN F. ZINN
<i>Associate Bronchoscopist</i>	FAYNE A. KAYSER
<i>Assistant Bronchoscopists</i>	{ THEODORE A. SCHWARTZ ROBERT Z. BERRY
<i>Orthopaedic Surgeon-in-Chief</i>	H. L. ROGERS
<i>Associate Orthopaedic Surgeon</i>	HENRY F. ULLRICH
	{ I. H. MASERITZ J. H. GASKEL
<i>Assistant Orthopaedic Surgeons</i>	{ ISAAC GUTMAN EVERETT D. JONES
<i>Proctologist-in-Chief</i>	SIMON P. BRAGER
<i>Proctologist</i>	WILLIAM J. SUPIK
<i>Urologist-in-Chief</i>	KENNETH D. LEGGE
	{ LEON K. FARGO FRANCIS W. GILLIS
<i>Associate Urologists</i>	{ J. S. HAINES JOHN D. YOUNG, JR. ³
<i>Dermatologist-in-Chief</i>	FRANCIS A. ELLIS
	{ EUGENE S. BERESTON R. C. V. ROBINSON
<i>Dermatologists</i>	{ WILLIAM R. BUNDICK
<i>Dentist</i>	J. D. FUSCO
<i>Consulting Dentist</i>	CONRAD L. INMAN
<i>Consulting Physician</i>	MAURICE C. PINCOFFS
<i>Consultant, Diseases of the Chest</i>	H. VERNON LANGELOTTIG
<i>Physician-in-Chief</i>	H. RAYMOND PETERS
	{ HARVEY G. BECK ⁵ THOMAS P. SPRUNT GEORGE MCLEAN
<i>Physicians</i>	{ J. SHELDON EASTLAND LOUIS A. M. KRAUSE THOMAS C. WOLFF T. NELSON CAREY SOL SMITH

³ Resigned June 1, 1952.⁵ Died Oct. 30, 1951.

MERCY HOSPITAL STAFF—*Cont'd.*

	{	HUBERT C. KNAPP ^{5a}
	{	BARTUS T. BAGGOTT
	{	WETHERBEE FORT
<i>Associate Physicians</i>	{	HUGH J. WELCH
	{	S. EDWIN MULLER
	{	FREDERICK J. VOLLMER
	{	WILLIAM H. KAMMER
	{	S. A. TUMMINELLO
	{	J. HOWARD BURNS
	{	EARL L. CHAMBERS
	{	K. W. GOLLEY
	{	JOHN R. DAVIS, JR.
	{	J. EMMETT QUEEN
<i>Assistant Physicians</i>	{	JOHN C. OSBORNE
	{	ARTHUR KARFGIN
	{	HENRY J. MARRIOTT
	{	JAMES J. NOLAN
	{	MAURICE FELDMAN, JR.
	{	E. ELLSWORTH COOK, JR.
	{	THADDIUS C. SIWINSKI ⁶
<i>Gastro-Enterologist</i>	{	MAURICE FELDMAN
<i>Associate Gastro-Enterologist</i>	{	PHILIP D. FLYNN
<i>Consulting Pediatrician</i>	{	EDGAR B. FRIEDENWALD
<i>Pediatrician-in-Chief</i>	{	FREDERICK B. SMITH
<i>Associate Pediatrician</i>	{	G. BOWERS MANSDORFER
	{	JEROME FINEMAN
	{	O. WALTER SPURRIER
	{	ISRAEL P. MERANSKI
	{	EDWARD L. FREY, JR.
<i>Assistant Pediatricians</i>	{	EARL WEEKS
	{	DONALD D. COOPER
	{	JOSEPH M. CORDI
	{	J. CARLTON WICH
	{	DAVID JOSEPHS ⁶
<i>Consulting Neurologist</i>	{	ANDREW C. GILLIS
	{	HARRY GOLDSMITH
	{	PHILIP F. LERNER
	{	GEORGE G. MERRILL
<i>Associate Neurologists and Psychiatrists</i>	{	EDWARD L. SUAREZ-MURIAS
	{	FREDERICK S. WOLF ⁶
	{	JOHN C. BRICKNER
	{	WILLIAM A. RINN
<i>Anesthesiologist</i>	{	JAMES RUSSO
<i>Consulting Obstetrician</i>	{	EDWARD P. SMITH
<i>Obstetrician-in-Chief</i>	{	JOHN J. ERWIN

^{5a} Died Dec. 31, 1951.⁶ On Military Leave.

MERCY HOSPITAL STAFF—*Cont'd.*

<i>Obstetricians</i>	{ THOMAS K. GALVIN
	{ FRANK K. MORRIS
	{ ERNEST S. EDLOW
	{ HUGH B. McNALLY
<i>Associate Obstetricians</i>	{ WILLIAM C. DUFFY
	{ CHARLES H. DOELLER, JR.
	{ WILLIAM A. DODD
	{ HARRY MCB. BECK
<i>Assistant Obstetricians</i>	{ JOSEPH C. SHEEHAN ⁶
	{ ROBERT B. TUNNEY
	{ J. HOWARD BURNS
	{ HARRY F. KANE
<i>Gynecologist-in-Chief</i>	{ WILLIAM J. RYSANEK, JR.
	{ THOMAS K. GALVIN
	{ EDWARD P. SMITH
	{ JOHN J. ERWIN
<i>Gynecologists</i>	{ FRANK K. MORRIS
	{ GEORGE A. STRAUSS, JR.
	{ ERNEST S. EDLOW
	{ CHARLES H. DOELLER, JR.
<i>Associate Gynecologists</i>	{ WILLIAM A. DODD
	{ HARRY MCB. BECK
	{ WILLIAM C. DUFFY
	{ GERALD A. GALVIN
<i>Assistant Gynecologists</i>	{ JOSEPH C. SHEEHAN
	{ ROBERT B. TUNNEY
	{ HARRY F. KANE
	{ WILLIAM J. RYSANEK, JR.
<i>Pathologist-in-Chief</i>	{ JOHN F. ULLSPERGER
	{ F. X. PAUL TINKER
	{ VINCENT DEPAUL
	{ WALTER C. MERKEL
<i>Pathologist</i>	HUGH R. SPENCER
<i>Clinical Pathologist</i>	H. T. COLLEBERG
<i>Clinical Hematologist</i>	H. RAYMOND PETERS
<i>Clinical Biochemist</i>	CHARLES E. BRAMBEL
<i>Technicians</i>	{ SISTER PAULA MARIE
	{ SISTER M. CONRAD
	{ ELEANOR BEHR
	{ ELIZABETH JOHNSON
	{ CONSTANCE CHAPMAN
	{ FLORESE SAMORODIN
	{ MARY MEYER
	{ ANNE MURDOCK
	{ ANN SCOTT
	{ ELLEN GREEN
	{ EDITH RUIZ

⁶ On Military Leave.

MERCY HOSPITAL STAFF—*Con't.*

<i>Radiologist</i>	EDWARD R. DANA
	{ SISTER M. JULIENA
	{ ANN BROOKS
<i>Technicians (X-ray)</i>	{ SARA CROSS
	{ NANCY BARKSDALE
	{ RUTH MAY, R.N.

MERCY HOSPITAL RESIDENT AND INTERN STAFF

JULY 1, 1952—JUNE 30, 1953

RESIDENT STAFF

CLYDE D. THOMAS, JR., M.D.	<i>Resident Surgeon</i>
MIER BIZER, B.S., M.D.	<i>Associate Resident Surgeon</i>
LEONARD G. HAMBERRY, A.B., M.D.	<i>Senior Assistant Resident Surgeon</i>
WILLIAM B. REVER, JR., M.D.	<i>Senior Assistant Resident Surgeon</i>
ROBERT A. MOORE, JR., A.B., M.D.	<i>Junior Assistant Resident Surgeon</i>
ERNANI V. CERTEZA, A.A., M.D.	<i>Junior Assistant Resident Surgeon</i>
FRANK A. FARAINO, B.S., M.D.	<i>Resident in Thoracic Surgery</i>
JAMES S. BROWNE, M.D.	<i>Assistant Resident in Neurosurgery (July 1, 1952 to Dec. 31, 1952)</i>
AUGUST KIEL, JR., M.D.	<i>Assistant Resident in Neurosurgery (Jan. 1, 1953 to June 30, 1953)</i>
MARGARET L. HAMBERRY, B.A., M.D.	<i>Resident in Pathology</i>
ARTHUR R. FLEMING, B.S., M.D.	<i>Resident in Gynecology</i>
RUDOLPH M. ZANDER, M.D.	<i>First Assistant Resident in Gynecology and Obstetrics</i>
EDWARD M. BARCZAK, M.D.	<i>Second Assistant Resident in Gynecology and Obstetrics</i>
MARTINA-TIRONA-CERTEZA, A.A., M.D.	<i>Resident Pediatrician</i>
CHARLES R. IRELAND, M.D.	<i>Resident Physician</i>
GENEVIEVE M. TIRRELL, M.D.	<i>Assistant Resident Physician</i>

ROTATING INTERNES

ROBERT J. LYDEN, M.D.
 MICHAEL K. QUINN, M.B., Bch, B.A.O.
 CARLOS RODRIGUEZ, M.D.

MERCY HOSPITAL OUTPATIENT DEPARTMENT STAFF

<i>Dispensary Director</i>	SISTER M. ANITA ³
<i>Director of Surgical Clinic</i>	WALTER D. WISE
<i>Chief of Surgical Clinic</i>	HAROLD H. BURNS

³ Resigned June 1, 1952.

MERCY HOSPITAL OUTPATIENT DEPARTMENT STAFF—*Con't.*

	{	I. RIDGEWAY TRIMBLE
		HOWARD L. ZUPNIK
		DANIEL R. ROBINSON
		JOSEPH V. JERARDI
		WILLIAM C. DUNNIGAN
		WILLIAM L. GARLICK
		JOHN F. SCHAEFFER
<i>Assistant Surgeons</i>		F. FORD LOKER
		PATRICK C. PHELAN
		ARTHUR G. SIWINSKI
		MELVIN F. POLEK
		MICHAEL L. DEVINCENTIS
		PAUL R. ZIEGLER
		HAROLD P. BIEHL
		KIRK MOORE
<i>Chief of Plastic Surgery</i>		EDWARD A. KITLOWSKI
<i>Assistant in Plastic Surgery</i>		CLARENCE P. SCARBOROUGH
<i>Chief of Urology Clinic</i>		KENNETH D. LEGGE
	{	FRANCIS W. GILLIS
<i>Assistant Urologists</i>		L. K. FARGO
		JOHN S. HAINES
		JOHN D. YOUNG, JR. ³
<i>Chief of Proctology Clinic</i>		SIMON H. BRAGER
<i>Assistant Proctologist</i>		WILLIAM J. SUPIK
<i>Chief of Orthopaedic Clinic</i>		HARRY L. ROGERS
	{	HENRY F. ULLRICH
		ISAAC GUTMAN
<i>Assistant Orthopaedic Surgeons</i>		JASON H. GASKEL
		I. H. MASERITZ
		EVERETT D. JONES
<i>Chief of Thoracic-Surgery Clinic</i>		WILLIAM L. GARLICK
<i>Chief of Neuro-Surgery Clinic</i>		CHARLES BAGLEY, JR.
	{	JOHN W. CHAMBERS
<i>Neuro-Surgeons</i>		FRANK J. OTENASEK
		RAYMOND K. THOMPSON
<i>Director of Medical Clinic</i>		H. RAYMOND PETERS
	{	SOL SMITH
<i>Chiefs of Medical Clinic</i>		S. EDWIN MULLER

³ Resigned June 1, 1952

MERCY HOSPITAL OUTPATIENT DEPARTMENT STAFF—*Cont'd.*

	{	FREDERICK J. VOLLMER
		WILLIAM H. KAMMER
		JOHN R. DAVIS
		J. EMMETT QUEEN
		CHARLES F. O'DONNELL
Assistant Physicians.....	{	ARTHUR KARFGIN
		JOHN C. OSBORNE
		MAURICE FELDMAN, JR.
		JAMES J. NOLAN
		E. ELLSWORTH COOK, JR.
	{	THADDEUS C. SIWINSKI ⁶
Chief of Allergy Clinic.....		S. EDWIN MULLER
Chief of Cardiovascular Clinic.....		THOMAS C. WOLFF
Assistant Cardiologists.....	{	LEON ASHMAN
		HENRY J. MARRIOTT
Chief of Metabolism Clinic.....		J. SHELDON EASTLAND
Assistant in Metabolism Clinic.....		J. EMMETT QUEEN
Chief of Gastro-Enterology Clinic.....		MAURICE FELDMAN, SR.
Associate Gastro-Enterologist.....		PHILIP D. FLYNN
Director of Pediatric Clinic.....		FRED B. SMITH
Chief of Pediatric Clinic.....		G. BOWERS MANSDORFER
	{	ISRAEL T. MERANSKI
		O. WALTER SPURRIER
Assistant Pediatricians.....	{	EDWARD L. FREY, JR.
		EARL WEEKS
		JOSEPH CORDI
	{	DAVID JOSEPHS ⁶
Chief of Neurologic and Psychiatric Clinics.....		PHILIP F. LERNER
Associate Neurologist and Psychiatrist.....		GEORGE G. MERRILL
Consulting Psychiatrists.....	{	ANDREW C. GILLIS
		EDWARD L. SUAREZ-MURIAS
Assistant Neurologist and Psychiatrists.....	{	FRANK J. AYD, JR.
		JOHN C. BRICKNER
Director of Dermatology and Syphilis Clinic.....		FRANCIS A. ELLIS
	{	R. C. V. ROBINSON
Assistant Dermatologists and Syphilologists.....		EUGENE S. BERESTON
	{	WILLIAM R. BUNDICK
Oncologist.....		JAMES W. NELSON
Anticoagulant Clinic.....		CHARLES E. BRAMBEL
Director of Gynecology Clinic.....		THOMAS K. GALVIN
Chief of the Gynecology Clinic.....		FRANK K. MORRIS

⁶ On Military Leave.

MERCY HOSPITAL OUTPATIENT DEPARTMENT STAFF—*Cont'd.*

	{	J. J. ERWIN
		ERNEST S. EDLOW
		CHARLES H. DOELLER, JR.
		WILLIAM A. DODD
		HARRY F. KANE
		HARRY MCB. BECK
		WILLIAM C. DUFFY
Assistant Gynecologists.....	{	JOSEPH C. SHEEHAN ⁶
		ROBERT B. TUNNEY
		GERALD A. GALVIN
		JOHN M. PALESE
		JOHN F. ULLSPERGER
		F. X. PAUL TINKER
		VINCENT DEPAUL FITZPATRICK, JR.
		ANTHONY DiPAULA
Chief of Obstetrical Clinic.....	{	JOHN J. ERWIN
		HARRY F. KANE
		WILLIAM A. DODD
		HARRY MCB. BECK
		JOSEPH C. SHEEHAN ⁶
Assistant Obstetricians.....	{	ROBERT B. TUNNEY
		WILLIAM J. RYSANEK, JR.
		ANTHONY DiPAULA
		JOHN F. ULLSPERGER
		VINCENT DEPAUL FITZPATRICK, JR.
		J. BROOKE BOYLE, JR.
Chief Esophagoscopist.....	{	WAITMAN F. ZINN
Associate Esophagoscopist.....	{	FAYNE A. KAYSER
Chief Rhinologist and Laryngologist.....	{	WAITMAN F. ZINN
		THEODORE A. SCHWARTZ
		BENJAMIN H. ISAACS
Assistant Rhinologists and Laryngologists.....	{	ARTHUR WARD
		ROBERT Z. BERRY
		JOHN M. REHBERGER
		HARRY P. PORTER
Chief of Ophthalmology Clinic.....	{	M. RASKIN
Assistant Ophthalmologists.....	{	F. A. PACIENZA
		JOSEPH V. JEPPI
Chief of Dental Clinic.....	{	J. D. FUSCO
Assistant Chief, Dental Clinic.....	{	EDWARD R. STINEBERT
Consulting Dentist.....	{	CONRAD L. INMAN
Physiotherapists.....	{	LEON HANNAN
		ALICE R. HANNAN
Director Social Service Department.....	{	SISTER M. SCHOLASTICA

⁶ On Military Leave.

MEDICAL CARE CLINIC

MERCY HOSPITAL

Director S. EDWIN MULLER
Assistant Director FRANCES V. LOUGHNEY

The Medical Care Clinic at Mercy Hospital is one of six special clinics established and conducted for the Baltimore City Health Department. These clinics were established by the Medical and Chirurgical Faculty of Maryland and the State Planning Commission. The program takes up an unmet need for the indigent.

The City Welfare Department certifies recipients of public assistance to the Health Department. The Health Department in turn, assigns recipients to one of the medical care clinics operated by local hospitals, namely—Johns Hopkins, Sinai, University of Maryland, Mercy, Provident and South Baltimore. The clinic assignments are made primarily on a geographic basis.

During the current year the Medical Care Clinic at Mercy Hospital is providing facilities for three thousand clients. It provides the eligible individual an initial physical examination, chest X-ray, bacteriological and other laboratory tests as indicated. Arrangements are also made by the Clinic to have each client register with a family physician of his or her choice selected from those Baltimore physicians who have agreed to participate in the program. The Clinic notifies the physician chosen, and sends to him a complete written report of the physical findings.

The plan gives physicians an opportunity for contacts with the personnel and diagnostic facilities of the participating hospitals. At the request of the client's physician, consultation services of the Staff at Mercy are made available. These services include Medicine, Surgery, Gynecology, Urology, Orthopedics, Dermatology, Neurology and other specialties, together with clinical laboratory facilities.

The Mercy Clinic is located on the 4th floor of the College Building. It includes a reception area, offices and examining rooms. An active personnel of Doctors, Nurses, Medical Technician and Medical Secretary are on duty from 9 A.M. to 5 P.M.

MERCY HOSPITAL OUT-PATIENT DEPARTMENT REPORT

JANUARY 1, 1951 TO JANUARY 1, 1952

<i>Departments</i>	<i>New Cases</i>	<i>Old Cases</i>	<i>Total</i>
Allergy.....	11	50	61
Bronchoscopic.....	312	537	849
Cardiology.....	33	293	326
Dental.....	162	135	297
Dermatology.....	270	765	1,035
Diabetic.....	36	609	645
Gastro-intestinal.....	47	142	189
Genito-urinary.....	75	227	302
Gynecology.....	358	1,172	1,530
Medical Care.....	203	0	203
Medicine.....	634	2,891	3,525
Neurology.....	127	478	605
Neuro-surgery.....	36	68	106
Ophthalmology.....	331	437	768
Orthopaedics.....	211	559	770
Pediatrics.....	629	1,584	2,213

MERCY HOSPITAL OUTPATIENT DEPARTMENT REPORT—*Cont'd.*

<i>Departments</i>	<i>New Cases</i>	<i>Old Cases</i>	<i>Total</i>
Physiotherapy.....	30	402	432
Plastic Surgery.....	2	1	3
Postnatal.....	235	2	237
Prenatal.....	353	2,707	3,060
Proctology.....	61	101	162
Rhinolaryngology.....	491	588	1,079
Surgery.....	1,028	2,753	3,781
Surgical Follow-Up.....	145	514	659
Total.....	5,822	17,015	22,837

THE BALTIMORE CITY HOSPITALS

STAFF, 1952-1953

PARKER J. McMILLIN, *Superintendent*

<i>Surgeon-in-Chief</i>	OTTO C. BRANTIGAN, M.D.
	{ JAMES C. OWINGS, M.D.
	{ I. RIDGEWAY TRIMBLE, M.D.
	{ AMOS KOONTZ, M.D.
<i>Visiting Surgeons</i>	{ THURSTON R. ADAMS, M.D.
	{ HARRY C. BOWIE, M.D.
	{ DONALD B. HEBB, M.D.
<i>Visiting Thoracic Surgeon</i>	{ WILLIAM L. GARLICK, M.D.
	{ R. ADAMS COWLEY, M.D.
<i>Consultant in Traumatic Surgery</i>	C. A. REIFSCHNEIDER, M.D.
<i>Visiting Hand Surgeon</i>	RAYMOND M. CURTIS, M.D.
<i>Visiting Gastro-Enterologist</i>	FRANCIS DICKEY, M.D.
	{ CHARLES BAGLEY, JR., M.D.
<i>Visiting Neuro-Surgeons</i>	{ RICHARD G. COBLENTZ, M.D.
	{ JAMES G. ARNOLD, M.D.
<i>Assistant Visiting Neuro-Surgeon</i>	R. K. THOMPSON, M.D.
<i>Consultant in Plastic Surgery</i>	EDWARD A. KITLOWSKI, M.D.
<i>Visiting Plastic Surgeon</i>	CLARENCE P. SCARBOROUGH, M.D.
<i>Visiting Proctologist</i>	MONTE EDWARDS, M.D.
	{ W. HOUSTON TOULSON, M.D.
<i>Visiting Urologists</i>	{ HUGH JEWITT, M.D.
	{ HOWARD B. MAYS, M.D.
<i>Assistant Visiting Urologist</i>	JOHN D. YOUNG, M.D.
<i>Consulting Gynecologist</i>	J. MASON HUNDLEY, JR., M.D.
<i>Visiting Gynecologist</i>	BEVERLEY C. COMPTON, M.D.
<i>Visiting Proctologist</i>	MONTE EDWARDS, M.D.
	{ WILLIAM K. DIEHL, M.D.
<i>Assistant Visiting Gynecologists</i>	{ EVERETT S. DIGGS, M.D.
	{ THEODORE KARDASH, M.D.

BALTIMORE CITY HOSPITAL STAFF—*Cont'd.*

<i>Visiting Orthopedic Surgeons</i>	{ ALLEN F. VOSHELL, M.D. MILTON J. WILDER, M.D.
<i>Assistant Visiting Orthopedic Surgeons</i>	{ ISAAC A. GUTMAN, M.D. EVERETT D. JONES, M.D.
<i>Visiting Otolaryngologists</i>	{ JOHN BORDLEY, M.D. FRED T. KYPER, M.D. ALFRED T. LIEBERMAN, M.D.
<i>Assistant Visiting Otolaryngologists</i>	JOHN H. HIRSCHFELD, M.D.
<i>Visiting Ophthalmologist</i>	CHARLES E. ILIFF, JR., M.D.
<i>Visiting Oncologist</i>	ARTHUR G. SIWINSKI, M.D.
<i>Visiting Anesthesiologists</i>	{ ALFRED T. NELSON, M.D. THEODORE STACY, M.D. LEONARD ABRAMOVITZ, M.D.
<i>Consultant in Peripheral Vascular Diseases</i>	GEORGE H. YEAGER, M.D.
<i>Chief Pathologist</i>	C. GARDNER WARNER, M.D. ^{3a}
<i>Visiting Neuropathologist</i>	JOHN A. WAGNER, M.D.
<i>Consultant in Psychiatry</i>	ESTHER L. RICHARDS, M.D.
<i>Chief Radiologist</i>	JOHN DECARLO, JR., M.D.
<i>Chief Pediatrician</i>	HAROLD E. HARRISON, M.D.
<i>Assistant Chief Pediatrician</i>	LAURENCE FINBURG, M.D.
<i>Visiting Pediatricians</i>	{ MILTON MARKOWITZ, M.D. ARNOLD TRAMER, M.D.
<i>Chief Hospital Physician—Tuberculosis</i>	H. VERNON LANGELOTTIG, M.D.
<i>Assistant Hospital Physician—Tuberculosis</i>	EDMUND G. BEACHAM, M.D.
<i>Visiting Physicians—Tuberculosis</i>	{ ALVIN S. HARTZ, M.D. JOHN H. HIRSCHFELD, M.D.
<i>Chief Physician, Acting</i>	C. HOLMES BOYD, M.D.
<i>Assistant Chief Physician</i>	HOWARD K. RATHBUN, M.D.
<i>Visiting Physicians</i>	{ LOUIS A. M. KRAUSE, M.D. WILLIAM G. SPEED, III, M.D. CRAWFORD N. KIRKPATRICK, M.D. EARNEST GROSS, M.D. JOSEPH KING, M.D. JOHN H. MILLER, M.D. DONALD M. WATKINS, M.D.
<i>Assistant Visiting Physicians (USPHS)</i>	{ MILTON LANDOWNE, M.D. MORTON D. BOGDONOFF, M.D. HAROLD M. SILVER, M.D.
<i>Physiologist</i>	NATHAN W. SHOCK, PH.D.
<i>Visiting Neurologist</i>	J. W. MAGLADERY, M.D.
<i>Assistant Visiting Neurologist</i>	DAVID B. CLARK, M.D.

^{3a} July 31, 1952.

BALTIMORE CITY HOSPITAL STAFF—*Cont'd.*

<i>Visiting Dermatologist</i>	RAYMOND C. V. ROBINSON, M.D.
<i>Visiting Laboratory Physician</i>	JULIUS WAGHELSTEIN, M.D.
<i>Consultant in Hematology</i>	PHILIP F. WAGLEY, M.D.
<i>Consultant in Neurology</i>	FRANK R. FORD, M.D.
<i>Chief Dental Surgeon</i>	H. GLENN WARING, D.D.S.
<i>Assistant Visiting Dental Surgeons</i>	{ L. W. BIMESTEFER, D.D.S. MICHAEL VARIPATIS, D.D.S. B. W. MIKSINSKI, D.D.S.
<i>Orthodontist</i>	R. KENT TONGUE, D.D.S.
<i>Exodontist</i>	RICHARD COLMAN, D.D.S.
<i>Chief Obstetrician</i>	LOUIS H. DOUGLASS, M.D.
<i>Visiting Obstetrician</i>	J. MORRIS REESE, M.D.
<i>Assistant Visiting Obstetricians</i>	{ D. FRANK KALTREIDER, M.D. JOHN E. SAVAGE, M.D. J. WILLIAM DORMAN, M.D. W. NEWTON LONG, JR., M.D. GEORGE W. ANDERSON, M.D. LOUIS C. GAREIS, M.D.

THE JAMES LAWRENCE KERNAN HOSPITAL AND
INDUSTRIAL SCHOOL OF MARYLAND FOR
CRIPPLED CHILDREN

STAFF, 1952-1953

<i>Surgeon-in-Chief and Medical Director</i>	ALLEN FISKE VOSHELL, A.B., M.D.
<i>Associate Orthopaedic Surgeons</i>	{ MOSES GELLMAN, B.S., M.D. HARRY L. ROGERS HARRY F. ULLRICH, M.D. WINTHROP M. PHELPS, A.B., M.D. MILTON J. WILDER, M.D. DAVID L. FILTZER, M.D. JAMES P. MILLER, M.D.
<i>Roentgenologist</i>	CHARLES N. DAVIDSON, M.D.
<i>Plastic Surgeon</i>	EDWARD A. KITLOWSKI, A.B., M.D.
<i>Aurist and Laryngologist</i>	BENJAMIN S. RICH, A.B., M.D.
<i>Dentist</i>	M. E. COBERTH, D.D.S.
<i>Cardiologist</i>	HELEN M. TAUSSIG, M.D.
<i>Pediatricist</i>	MELCHIJAH SPRAGINS, M.D.
<i>Consulting Surgeon</i>	CHARLES REID EDWARDS, A.B., M.D.
<i>Consulting Aurists and Laryngologists</i>	EDWARD A. LOOPER, M.D., D.Oph.
<i>Consulting Neurological Surgeon</i>	CHARLES BAGLEY, JR., M.A., M.D.
<i>Consulting Dermatologists</i>	{ HARRY M. ROBINSON, SR., M.D. LEON GINSBURG, M.D.
<i>Consulting Neurologists</i>	{ IRVING J. SPEAR, M.D. R. V. SELIGER, M.D.

KERNAN HOSPITAL STAFF—*Cont'd.*

<i>Consulting Pediatricists</i>	{ BENJAMIN TAPPAN, A.B., M.D. J. EDMUND BRADLEY, M.D.
<i>Consulting Dentist</i>	HARRY B. MCCARTHY, D.D.S.
<i>Consulting Pathologist</i>	HUGH R. SPENCER, M.D.
<i>Consulting Roentgenologist</i>	HENRY J. WALTON, M.D.
<i>Resident Orthopaedic Surgeons</i>	{ WILLIAM T. KERNAHAN ROBERT T. STRANG
<i>Superintendent</i>	MISS MAUD M. GARDNER, R.N.
<i>Dispensary and Social Service Nurse</i>	MRS. EVELYN BYRD ZAPP, R.N.
<i>Physical Therapists and X-ray Technicians</i>	{ MISS NANCY R. BUTLER MISS JULIA A. COLLINS MRS. GEORGINA WISONG
<i>Occupational Therapist</i>	{ MRS. T. LYNN BUTTRICK, O.T. MRS. VIRGINIA SHAUN, O.T.
<i>Instructor in Grammar School</i>	MISS BERTHA SENDELBACK

HISTORY OF THE SCHOOL OF MEDICINE

The present School of Medicine, with the title University of Maryland School of Medicine and College of Physicians and Surgeons, is the result of a consolidation and merger of the University of Maryland School of Medicine with the Baltimore Medical College (1913) and the College of Physicians and Surgeons of Baltimore (1915).

Through the merger with the Baltimore Medical College, an institution of thirty-two years' growth, the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated in 1872, and established on Hanover Street in a building afterward known as the *Malernité*, the first obstetrical hospital in Maryland. In 1878 union was effected with the Washington University School of Medicine, in existence since 1827, and the college was removed to Calvert and Saratoga Streets. Through the consolidation with the College of Physicians and Surgeons, medical control of the teaching beds in the Mercy Hospital was obtained.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was organized in 1807 and chartered in 1808 under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties: Divinity, Law, and Arts and Sciences; and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

The original building of the Medical School at the N. E. corner of Lombard and Greene Streets was erected in 1812. It is the oldest structure in this country from which the degree of doctor of medicine has been granted annually since its

erection. In this building were founded one of the first medical libraries and one of the first medical school libraries in the United States.

At this Medical School dissection was made a compulsory part of the curriculum, and independent chairs for the teaching of gynecology and pediatrics (1867), and of ophthalmology and otology (1873), were installed for the first time in America.

This School of Medicine was one of the first to provide for adequate clinical instruction by the erection of its own hospital in 1823. In this hospital intramural residency for senior students was established for the first time.

The School of Medicine has been co-educational since 1918.

BUILDINGS AND FACILITIES

The original medical building at the N. E. corner of Lombard and Greene Streets houses the office of the Dean, Room 101, the office of the Committee on Admissions, Room 102, two lecture halls, the faculty room and office of the assistant business manager.

The Administration Building, to the east of the original building, contains the Baltimore offices of the Registrar and two lecture halls.

The laboratory building at 31 South Greene Street is occupied by the departments of Pathology, Bacteriology and Biochemistry

The Frank C. Bressler Research Laboratory provides the departments of Anatomy, Histology and Embryology, Pharmacology, Physiology and Clinical Pathology with facilities for teaching and research. It also houses the research laboratories of the clinical departments, animal quarters, a laboratory for teaching Operative Surgery, a lecture hall and the Bressler Memorial Room.

This building was erected in 1939-1940 at 29 South Greene Street opposite the University Hospital. It was built with funds left to the School of Medicine by the late Frank C. Bressler, an alumnus, supplemented by a grant from the Federal government. The structure, in the shape of an I, extends east from Greene Street, just north of the original building.

MEDICAL LIBRARY

The Medical Library of the University of Maryland, founded in 1813 by the purchase of the collection of Dr. John Crawford, now numbers 33,000 volumes and several thousand pamphlets and reprints. Over four hundred of the leading medical journals, both foreign and domestic, are received regularly. The library is housed in Davidge Hall, in close proximity to classrooms and laboratories, and is open daily for the use of members of the faculty, the student body and the profession generally. Libraries pertaining to particular phases of medicine are maintained by several departments of the medical school.

The library of the Medical and Chirurgical Faculty of Maryland and the Welch Medical Library are open to students of the medical school without charge. Other libraries of Baltimore are the Peabody Library and the Enoch Pratt Free Library.

OUT PATIENT DEPARTMENT

The old hospital building has been remodeled and is occupied by the Out-patient Department. Thus the students have been provided with a splendidly appointed group of clinics for their training in out-patient work. All departments of clinical

training are represented in this remodeled building and all changes have been predicated on the teaching function for which this department is intended.

The Department of Art occupies quarters here.

UNIVERSITY HOSPITAL

The University Hospital, which is the property of the University of Maryland, is the oldest institution for the care of the sick in the state of Maryland. It was opened in September 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for patients with diseases of the eye.

In 1933-1934 the new University Hospital was erected and patients were admitted to this building in November 1934. The new hospital is situated at the southwest corner of Redwood and Greene Streets, and is consequently opposite the medical school buildings. The students, therefore, are in close proximity and little time is lost in passing from the lecture halls and laboratories to the clinical facilities of the new building.

This new building, with its modern planning, makes a particularly attractive teaching hospital and is a very valuable addition to the clinical facilities of the medical school.

The new hospital has a capacity of 435 beds and 65 bassinets devoted to general medicine, surgery, obstetrics, pediatrics, and the various medical and surgical specialties.

The teaching zone extends from the second to the eighth floor and comprises wards for surgery, medicine, obstetrics, pediatrics, and a large clinical lecture hall. There are approximately 270 beds available for teaching.

The space of the whole north wing of the second floor is occupied by the department of roentgenology. The east wing houses clinical pathology and special laboratories for clinical microscopy, biochemistry, bacteriology, and an especially well appointed laboratory for students' training. The south wing provides space for electro-cardiographic and basal metabolism departments, with new and very attractive air-conditioned or oxygen therapy cubicles. The west wing contains the departments of rhinolaryngology and bronchoscopy, industrial surgery, and male and female cystoscopy.

The third and fourth floors each provide two medical and two surgical wards. The fifth floor contains two wards for pediatrics, and on the sixth floor there are two wards for obstetrics. Each ward occupies the space of one wing of the hospital.

On the seventh floor is the general operating suite, the delivery suite, and the central supply station. The eighth floor is essentially a students' floor and affords a mezzanine over the operating and delivery suites, and a students' entrance to the clinical lecture hall.

In the basement there is a very well appointed pathological department with a large teaching autopsy room and its adjunct service of instruction of students in pathological anatomy.

The hospital receives a large number of accident patients because of its proximity to the largest manufacturing and shipping districts of the city.

The obstetrical service provides accommodation for 40 ward patients and assures the student abundant obstetrical training. During the year ending December 31st 1951, 3168 patients were delivered and discharged. Of these, 2228 were service cases and available for teaching. Each member of the graduating class participated in an average of 11 deliveries in addition to those he attended at Baltimore City Hospitals as a junior student.

The dispensaries associated with the University Hospital and the Mercy Hospital are organized upon a uniform plan in order that the teaching may be the same in each. Each dispensary has the following departments: medicine, surgery, pediatrics, ophthalmology, otology, genito-urinary, gynecology, gastroenterology, neurology, orthopaedics, proctology, dermatology, laryngology, rhinology, cardiology, tuberculosis, psychiatry, oral surgery and oncology.

All students in their junior year work each day during one-third of the year in the departments of medicine and surgery of the dispensaries. In their senior year, all students work one hour each day in the special departments.

MERCY HOSPITAL

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets, then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of ministering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space have compelled the erection of additions, until now there are accommodations for 350 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

The clinical material in the free wards is under the exclusive control of the Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons.

THE BALTIMORE CITY HOSPITALS

The clinical facilities of the School of Medicine have been largely increased by the liberal decision of the Department of Public Welfare to allow the use of the wards of these hospitals for medical education. The autopsy material also is available for student instruction.

Members of the junior class make daily visits to these hospitals for clinical instruction in medicine, surgery, and the specialties.

The Baltimore City Hospitals consist of the following separate divisions:

The General Hospital, 400 beds, 90 bassinets.

The Hospital for Chronic Cases, 575 beds.

The Hospital for Tuberculosis, 280 beds.

Infirmary (Home for Aged) 700 beds.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN

This institution is situated on an estate of 75 acres at Dickeyville. The site is within the northwestern city limits and of easy access to the city proper.

The location is ideal for the treatment of children, in that it affords all the advantages of sunshine and country air.

A hospital unit, complete in every respect, offers all modern facilities for the care of any orthopaedic condition in children.

The hospital is equipped with 80 beds—endowed, and city and state supported.

The orthopaedic dispensary at the University Hospital is maintained in closest affiliation and cares for the cases discharged from the Kernan Hospital. The physical therapy department is very well equipped with modern apparatus and trained personnel. Occupational therapy has been fully established and developed under trained technicians.

THE BALTIMORE EYE, EAR, AND THROAT HOSPITAL

This institution was first organized and operated in 1882 as an outgrowth of the Baltimore Eye and Ear Dispensary, which closed on June 14, 1882. The name then given to the new hospital was The Baltimore Eye and Ear Charity Hospital. It was located at the address now known as 625 W. Franklin St. The out-patient department was opened on September 18, 1882 and the hospital proper on November 1 of the same year. In 1898 a new building afforded 24 free beds and 8 private rooms; by 1907 the beds numbered 47; at present there are 60 beds, 29 of which are free. In 1922 the present hospital building at 1214 Eutaw Place was secured and in 1926 the dispensary was opened. In 1928 a clinical laboratory was installed. During 1951 the out-patient visits numbered 24,400.

Through the kindness of the Hospital Board and Staff, our junior students have access to the dispensary which they visit in small groups for instruction in ophthalmology.

REQUIREMENTS FOR ADMISSION

METHOD OF MAKING APPLICATION

Requests for application forms should be filed not earlier than September 15th preceding by one year the desired date of admission. These forms may be secured from the Committee on Admissions, School of Medicine, University of Maryland, Baltimore 1, Maryland.

APPLICATION FOR ADMISSION TO THE FIRST YEAR

Application for admission is made by filing the required form and by having all pertinent data sent directly to the Committee on Admissions, in accordance with the instructions accompanying the application.

Consideration will be given applications received after December 1st provided the class is not complete.

APPLICATION FOR ADMISSION TO ADVANCED STANDING

Students who have attended approved medical schools are eligible to file applications for admission to the second- and third-year classes only. These applicants must be prepared to meet the current first-year entrance requirements in addition to presenting acceptable medical school credentials, and a medical school record based on courses which are quantitatively and qualitatively equivalent to similar courses in this school.

Application to advanced standing is made in accordance with the instructions accompanying the application form.

Persons who already hold the degree of Doctor of Medicine will not be admitted to the Medical School as a candidate for that degree from this university.

MINIMUM REQUIREMENTS FOR ADMISSION

The minimum requirements for admission to the School of Medicine are:

- (a) Graduation from an approved secondary school, or the equivalent in entrance examinations, and
- (b) Three academic years of acceptable college credit, exclusive of physical education and military sciences, earned in colleges of arts and sciences, whose names occur in the current list of "Approved Colleges of Arts and Sciences" as compiled by the Council on Medical Education and Hospitals of the American Medical Association. The quantity and quality of this course of study shall be equivalent to that required for recommendation by the institution where the college courses are being, or have been, pursued.
- (c) The following courses and credits in basic required subjects must be completed by June of the year the applicant desires to be admitted:

	<i>Semester hours</i>	<i>Quarter hours</i>
General biology or zoology	*(6) 8	*(9) 12
Inorganic chemistry	*(6) 8	*(9) 12
Organic chemistry	6-8	9-12
General physics	*(6) 8	*(9) 12
English	6	9
Modern language (German, French, Spanish) . .	6	9

* Consideration will be given applicants from the New England area where 6 semester hours, or 9 quarter hours, is the standard credit for a science course.

- (d) The total semester-hour or quarter-hour credits presented must be equivalent in quantity and quality to three-fourths of the credit requirement for graduation by the recommending institution, exclusive of courses in physical education and military sciences.

Applicants who are unable to complete these requirements by June of the year admission is desired, will be considered contingent on places being available, provided all basic required courses and credits shall have been absolved by June as indicated in (c) above.

- (e) Students will not be admitted who have unabsolved conditions or failures in college courses.

Elective courses should be selected from the following three groups. Highly desirable courses are shown in bold face type.

<i>Humanities</i>	<i>Natural Sciences</i>	<i>Social Sciences</i>
English (an advanced course in English composition should be taken, if possible)	Vertebrate Embryology	Economics
Scientific German or French (A reading knowledge of either language is desirable, although German is preferred)	Comparative Vertebrate Anatomy	History
Philosophy	Quantitative Analysis	Political Science
	Physical Chemistry	Psychology (a general course is desirable)
	Mathematics	Sociology, etc.

Careful attention should be given the selection of elective courses in the natural sciences. It is suggested that the elective list given herewith be used as a guide. The remainder of college credits should be accumulated from courses designed to promote a broad cultural development. Thirty six semester hours in the humanities and social sciences are recommended in a three-year college course. Students should avoid taking courses in college which are included in the medical curriculum, for example histology, human anatomy, bacteriology, physiology, neurology and physiological chemistry.

It is not intended that these suggestions be interpreted as restrictions upon the education of students who manifest an aptitude for the natural sciences or as limitations upon the development of students who plan to follow research work in the field of medicine.

In accepting candidates for admission, preference will be given to those applicants who have acceptable scholastic records in secondary school and college, satisfactory scores in the Medical College Admission Test, given in May each year, favorable letters of recommendation from their premedical committees, or from one instructor in each of the departments of biology, chemistry, and physics, and who in other respects give promise of becoming successful students and physicians of high standing.

Those candidates for admission who are permanently accepted will receive a certificate of matriculation from the office of the Dean.

COMBINED COURSE IN ARTS AND SCIENCES AND MEDICINE

A combined seven years' curriculum leading to the degrees of Bachelor of Science and Doctor of Medicine is offered by the University of Maryland. The first three years are taken in residence in the College of Arts and Sciences at College Park, and the last four years in the School of Medicine in Baltimore. (See University catalogue for details of quantitative and qualitative college course requirements.)

If a candidate for the combined degree completes the work of the first year in the School of Medicine with an average of C or better without failures, and if he has absolved the quantitative and qualitative college requirements set up by the University, he is eligible to recommendation by the Dean of the School of Medicine that the degree of Bachelor of Science be conferred.

Because the general commencement usually takes place before the School of Medicine is prepared to release grades of the first-year class, this combined degree of Bachelor of Science is conferred at the commencement following the candidate's second year of residence in the School of Medicine

STATE MEDICAL STUDENT QUALIFYING CERTIFICATES

Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York, should apply to their respective state boards of education for medical student qualifying certificates (Pennsylvania and New Jersey) or approval of applications for medical student qualifying certificates (New York).

Those students who are accepted must file satisfactory State certificates in the office of the Committee on Admissions, School of Medicine, before registration. No exceptions will be made to this requirement.

Addresses of the State Certifying Offices

Director of Credentials Section, Pennsylvania Department of Public Instruction, Harrisburg, Pa.

Chief of the Bureau of Credentials, New Jersey Department of Public Instruction, Trenton, N. J.

Supervisor of Qualifying Certificates, The State Education Department, Examinations and Inspections Division, Albany, N. Y.

DEFINITION OF RESIDENCE AND NON-RESIDENCE

Students who are minors are considered to be resident students if at the time of their registration their parents* have been domiciled in this State for at least one year.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents move to and become legal residents of the State by maintaining such residence for at least one full year. However, the right of the minor students to change from a non-resident to resident status must be established by him prior to the registration period for any semester.

Adult students are considered to be resident if at the time of their registration they have been domiciled in this State for at least two years provided such residence has not been acquired while attending any school or college in Maryland or elsewhere.

The word domicile as used in this regulation shall mean the permanent place of abode. For the purpose of this rule only one domicile may be maintained.

The following interpretations and modifications of the above rules shall apply:

(A) The domicile of the wife shall be that of her husband, except in the case of a minor supported by her parents in which event the marital status will not be considered in determining the resident status.

(B) Should the parents be separated, the domicile of the parent who furnishes the support shall determine the resident status of the child.

(C) If the support for a minor not be furnished by the parent or guardian, the domicile of the person who furnishes the entire support shall determine the resident status of the child.

(D) Should the support for a student be derived from a trust fund established specifically for his support and education, the domicile of the person who established this fund during the full year previous thereto shall determine the resident status of the student.

(E) Should the parent or other person responsible for a student be required to leave a State for business or military reasons, he shall not be deprived of the right to claim resident status if it is evident that he intends to return to this State upon the completion of the special business or military assignment.

(F) The non-resident status of an adult may be changed upon proof that he has purchased and has maintained a home in Maryland for at least one full year; that he has become a registered voter of this State; and that he intends to make this State his domicile. These facts must be established prior to the registration period for the semester for which this change in status is requested.

* The term "parents" includes persons who have been legally constituted the guardians of or stand in loco parentis to such minor students.

CURRENT FEES

Matriculation fee (paid once).....	\$10.00
Tuition fee (each year)—Residents of Maryland.....	450.00
Tuition fee (each year)—Non-Residents.....	700.00
Laboratory fee (each year).....	25.00
Student health service fee (each year).....	20.00
Student activities and service fee (each year).....	20.00
†Lodging and meals fee.....	6.75
Graduation fee.....	15.00
Re-examination fee (each subject).....	5.00
Transcript fee to graduates. First copy gratis, each copy thereafter.....	1.00

RULES FOR PAYMENT OF FEES

No fees are returnable.

Make all checks or money orders payable to the "University of Maryland".

When offering checks or money orders in payment of tuition and other fees, students are requested to have them drawn in the exact amount of such fees. Personal checks whose face value is in excess of the fees due will be accepted for collection only.

Acceptance.—Payment of the matriculation fee of \$10.00 and of a deposit on tuition of \$50.00 is required of accepted applicants before the expiration date specified in the offer of acceptance. This \$60.00 deposit is not returnable and will be forfeited if the applicant fails to register, or it will be applied to the applicant's first semester's charges on registration.

Registration.—All students, after proper certification, are required to register at the business office, Gray Laboratory. (See calendar page 5 of this bulletin for dates for the payments of fees, and the note regarding late registration fee.)

One-half of the tuition fee and all of the following—the laboratory fee, the student health fee, the maintenance and service fee and the student activities fee are payable on the date specified for registration for the first semester.

The remainder of the tuition fee shall be paid on the date designated for the payment of fees for the second semester. Fourth year students shall pay the graduation fee, in addition, at this time.

PENALTY FOR NON-PAYMENT OF FEES

If semester fees are not paid in full on the specified registration dates, a penalty of \$5.00 will be added.

If a satisfactory settlement, or an agreement for settlement, is not made with the business office within ten days after a payment is due, the student automatically is debarred from attendance on classes and will forfeit the other privileges of the School of Medicine.

† Junior Students will be billed for this fee, covering lodging and meals while on obstetrical service at Baltimore City Hospitals. Section B on Schedule 2 will be billed for the first semester; Section A on Schedule 2 for the second semester. **This fee must be paid by all junior students** whether or not they serve during the previous summer or the academic year.

REEXAMINATION FEE

A student who is eligible to reexaminations must pay the business office \$5.00 for each subject in which he is to be examined, and he must present the receipt to the faculty member giving the examination before he will be permitted to take the examination.

STUDENT ACTIVITIES AND SERVICE FEE

This fee pays for the use of clothing lockers, provides library privileges, maintains student loan collections, a student lounge and cafeteria. It supports a recreational program for students of all classes, provides photographs for all school purposes, including state boards. It supports the activities of the Student Council. A portion (\$5) of this fee provides a year-book for each medical student.

STUDENT HEALTH SERVICE

JAMES R. KARNS, M.D.....Director, Student Health Service.

The Medical School has made provision for the systematic care of students according to the following plan:

1. *Preliminary Examination*—All new students will be examined during the first week of the semester. Notice of the date, time, and place of the examination will be announced to the classes and on the bulletin board. The passing of this physical examination is necessary before final acceptance of any student.

2. *Medical Attention*—Students in need of medical attention will be seen by the director, Dr. James R. Karns, in his office on the 8th floor University Hospital at 12 m. daily, except Saturday and Sunday. In case of necessity, students will be seen at their homes.

3. *Hospitalization*—If it becomes necessary for any student to enter the hospital during the school year, the school has arranged for the payment of part or all of his hospital expenses, depending on the length of his stay and special expenses incurred. This applies only to students admitted through the school physician's office.

4. *Physical Defects*—Prospective students are advised to have any known physical defects corrected before entering school in order to prevent loss of time which later correction might incur.

5. *Eye Examination*—Each new matriculant is required to undergo an eye examination at the hands of an oculist (Doctor of Medicine) within the three months immediately preceding his entrance to the School of Medicine. Long study hours bring out unsuspected eye defects which cause loss of time and inefficiency in study if not corrected before school work is under way.

6. *Limitations*—It is not the function of this service to treat chronic conditions contracted by students before admission, nor to extend treatment to acute conditions arising in the period between academic years, unless the school physician recommends this service.

GENERAL RULES

The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the university authorities deem it expedient.

GRADING SYSTEM

Official grades are designated by these symbols:

<i>Symbol</i>	<i>Scholarship</i>	<i>Numerical Equivalent</i>
A	Superior	93-100
B	Good	87- 92
C	Fair	80- 86
D	Passing	75- 79
F	Failure	Below 75
I	Incomplete	—
WF	Withdrew, failing	—

The class standing of seniors only will be released. This standing will appear on senior grade reports sent out from the Registrar's office after graduation.

ADVANCEMENT AND GRADUATION

1. No medical student will be permitted to begin work for credit in any semester of any year who reports for classes later than one week after classes begin, except by permission of the Dean.

2. No student will be permitted to advance with unabsolved failures.

3. An average of C or better without failures in the year most recently completed is required for advancement to junior and senior standing and for graduation.

4. A student who in any one year has one failure together with grades of D in all other subjects, will be dropped from the rolls.

5. A student who has failures in two completed major subjects will be dropped from the rolls.

6. All students are required to attend 85% of scheduled classes and (excluding seniors) take spring examinations unless excused by the Dean.

7. Should a student be required to repeat any year in any course, he must pay regular fees.

8. A student failing his final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and take examinations in such other branches as may be required, provided he is permitted to enter the school as a candidate for graduation.

9. The general fitness of a candidate for graduation as well as the results of his examinations will be taken into consideration by the faculty.

EQUIPMENT

10. At the beginning of the first year, all freshmen must provide themselves with microscopes of a satisfactory type equipped with a mechanical stage and a substage lamp. Also, each freshman must possess a complete set of dissecting instruments.

A standard microscope made by Bausch & Lomb, Leitz, Zeiss or Spencer fitted with the following attachments, meets the requirements.

16 mm., 10x, 0.25 N.A.—4.9 mm. working distance.

4 mm., 43x, 0.65 N.A.—0.6 mm. working distance.

1.8 mm., 97x, oil immersion, 1.25 N.A.—0.13 mm. working distance.

Oculars: 10x and 5x. Huygenian eyepieces.

Triple nose pieces with 16 mm., 4 mm., and 1.9 mm. 125 N.A. oil immersion lens.

Wide aperture stage with quick screw condenser and built on, but detachable, ungraduated mechanical stage. Substage condenser, variable focusing type 1.25 N.A. with iris diaphragm. A rack and pinion focusing device is preferred. Mirror-plane on one side, concave on the other. A carrying case is recommended.

Students are cautioned with respect to the purchase of used or odd-lot microscopes since some older instruments were equipped with a 4 mm. (high dry) objective whose N.A. is marked as 0.85 N.A. This objective has such a short working distance (0.3 mm.) that it is difficult or impossible to focus through thick cover glasses or the standard haemocytometer cover glass without breakage. All used microscopes are subject to inspection and approval by the Department of Microscopic Anatomy, second floor Bressler Research Laboratory, 29 S. Greene Street. See Dr. Lutz. This inspection is not made during August.

11. Students in the second year class are required to provide stethoscopes.

12. Third- and fourth-year students are required to provide themselves with haemocytometers, sphygmomanometers, ophthalmoscopes and otoscopes.

STATE QUALIFYING CERTIFICATES

13. Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York must file State qualifying certificates in the office of the Committee on Admissions, School of Medicine, before registration. No exception will be made to this rule.

EYE EXAMINATION BEFORE ADMISSION

14. Each new matriculant in each class is required to present to the Committee on Admissions a certificate from an oculist, (a graduate in medicine) that the matriculate's eyes have been examined under a cycloplegic and are in condition, with or without glasses as the case may be, to endure the strain of close and intensive reading.

It is required that this examination be completed within three months prior to registration and that the certificate be mailed to the Committee on Admissions not later than one month before registration.

AWARDING OF COMBINED DEGREES

15. Students entering the School of Medicine on a three-year requirement basis from colleges which usually grant a degree on the successful completion of the first year of medicine, are restricted by the following regulations:

a—The candidate must present a certificate from his college or university that he has absolved the quantitative and qualitative premedical requirements for this degree.

b—The candidate must acquire an average of C or better without failures for the work of his first year in the School of Medicine.

- c—The Dean of the School of Medicine reserves the right to withhold his recommendation that a bachelor's degree be conferred at a commencement which occurs before the official release of first-year medical grades.

COST OF TRANSCRIPTS

16. Graduates will receive the first transcript of record without charge. Subsequent copies will cost one dollar each. Requests for transcripts must be filed with the Registrar's Office, University of Maryland, Lombard and Greene Streets, Baltimore-1, Maryland.

CHANGE OF ADDRESS

17. Students are required to give the Dean's Office prompt notice of change in address.

HOUSING

There are no housing or living accommodations on the campus of the medical school.

PARKING

Because of lack of space on the university parking lots no parking facilities are provided thereon for students.

LIBRARY REGULATIONS

Loan Regulations

Loan periods have been worked out according to demand for and protection of different types of material.

Two-Week Loans: All books except those on reserve.

One-Week Loans: All journals except the latest number (which does not circulate), and those on reserve.

Overnight Loans: Books and journals on reserve.
(4 p.m.—12:30 a.m.)

Special Rules for Books on Reserve:

Students whose names appear on the check-list for the Mercy Hospital section will be granted the necessary hours to return reserve books.

Overnight books may be reserved in advance only within the week in which they will be used. Books may be reserved on Saturday for the following Monday.

Overnight books may not be reserved two successive nights by the same person.

Advance reserves will be held until one hour before closing.

Fines

Fines are imposed not to acquire money, but to assure equal access to books.

Two-Week Loans: 5¢ per day.

One-Week Loans: 5¢ per day.

Overnight Loans: 15¢ for first hour; 5¢ for each additional hour or fraction thereof.

Lost Books: List price of the book. (Lost books should be reported at once).

All books must be returned, lost books replaced or paid for, and fines paid before a student can finish the year in good standing.

In fairness to all concerned, these rules must be enforced without exception.

CERTIFICATION FOR STATE BOARD AND NATIONAL BOARD EXAMINATIONS

No student will be certified to State Board or National Board examiners who has unabsolved failures in subjects taken during the academic period covered by these examinations.

WITHDRAWALS AND REFUNDS

Formal Withdrawal Procedures

Students over 21 years of age desiring to leave the School of Medicine at any time during the academic year are required to file with the Dean a written application for withdrawal. In addition, the student must secure an "honorable dismissal release" form from the Dean's secretary, and return this to the Dean's office appropriately signed by representatives of the departments listed thereon, together with his "matriculation certificate."

If these procedures are not completed, the student will not be entitled to honorable dismissal nor to refund of fees.

Students under 21 years of age, must supplement the procedures previously described with the written consent of their parents or guardians.

Academic Standing On Withdrawal

Students who voluntarily withdraw during an academic semester will be given no credit.

Students are not permitted to resort to withdrawal in order to preclude current or impending failures. Their standing on withdrawal will be recorded in the registrar's office.

Students who withdraw from the School of Medicine, must apply to the Committee on Admissions for readmission, unless other arrangements have been consummated with the Dean's written consent.

Refunds on Withdrawal

Students who are eligible to honorable dismissal will receive a refund of current charges, after the matriculation fee has been deducted, according to the following schedule:

<i>Period elapsed after instruction begins.</i>	<i>Percentage refundable</i>
Two weeks or less.....	80%
Between two and three weeks.....	60%
Between three and four weeks.....	40%
Between four and five weeks.....	20%
After five weeks.....	0

PRIZES

THE FACULTY PRIZE

The Faculty will award the Faculty Gold Medal and Certificate and five Certificates of Honor to six of the first ten highest ranking candidates for graduation

who, during the four academic years, have exhibited outstanding qualifications for the practice of medicine.

THE DR. A. BRADLEY GAITHER MEMORIAL PRIZE

A prize of \$25.00 is given each year by Mrs. A. Bradley Gaither as a memorial to the late Dr. A. Bradley Gaither, to the student in the senior class doing the best work in genito-urinary surgery.

THE WILLIAM D. WOLFE MEMORIAL PRIZE

(Value \$100.00 each)

A certificate of proficiency and a prize of \$100.00 will be awarded each year until the fund is dissipated, to the graduate selected by the Advisory Board of the Faculty showing greatest proficiency in Dermatology.

THE DR. LEONARD M. HUMMEL MEMORIAL AWARD

A gold medal and certificate of proficiency will be awarded annually, as a memorial to the late Dr. Leonard M. Hummel, to the graduate selected by the Advisory Board of the Faculty who has manifested outstanding qualifications in Internal Medicine.

SCHOLARSHIPS

All scholarships are assigned for one academic year, unless specifically reawarded on consideration of an application.

Official application forms are obtainable at the Dean's office, where they should be filed four months before the ensuing academic year.

THE DR. SAMUEL LEON FRANK SCHOLARSHIP

(Value \$100.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this university.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Advisory Board of the Faculty "to a medical student of the University of Maryland, who in the judgment of said Council, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school. No student may hold this scholarship for more than two years.

THE CHARLES M. HITCHCOCK SCHOLARSHIPS

(Value \$100.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the university.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Advisory Board of the Faculty, to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Board satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

THE RANDOLPH WINSLOW SCHOLARSHIP

(Value \$100.00)

This scholarship was established by the late Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Advisory Board of the Faculty, to a "needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Faculty Board that he is worthy of and in need of assistance."

THE DR. LEO KARLINSKY MEMORIAL SCHOLARSHIP

(Value \$125.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of the university.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon the nomination of the Advisory Board of the Faculty, to "a needy student of the Senior, Junior or Sophomore Class of the Medical School."

He must have maintained in all his work up to the time of awarding the scholarship a satisfactory grade of scholarship.

He must be a person of good character and must satisfy the Advisory Board that he is worthy of and in need of assistance.

THE UNIVERSITY SCHOLARSHIP

A scholarship which entitles the holder to exemption from payment of tuition fee for the year, is awarded annually by the Advisory Board of the Faculty to a student of the senior class in need of assistance who presents to the Board satisfactory evidence of good character and scholarship.

THE FREDERICA GEHRMANN SCHOLARSHIP

(Value \$200.00)

(Not open to holders of Warfield and Cohen Scholarships)

This scholarship was established by the bequest of the late Mrs. Frederica Gehrmann and is awarded to a third-year student who at the end of the second year has passed the best practical examinations in physiology, pharmacology, pathology, bacteriology, immunology, serology, surgical anatomy and neuro-anatomy.

THE CLARENCE AND GENEVRA WARFIELD SCHOLARSHIPS

(Value \$300.00 each)

There are five scholarships established by the regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships are available to students of any of the classes of the course in medicine. Preference is given to students from the

counties of the state of Maryland which the Advisory Board of the Faculty may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must agree, after graduation and a year's internship, to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited, or in a county selected by the Board. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Board, the money advanced by the regents shall be refunded by the student.

THE ISRAEL AND CECELIA E. COHEN SCHOLARSHIP

(Value \$150.00)

This scholarship was established by the late Eleanor S. Cohen in memory of her parents, Israel and Cecelia E. Cohen. Terms and conditions: This scholarship will be available to students of any one of the classes of the course in medicine; preference is given to students of the counties in the state of Maryland which the Advisory Board of the Faculty may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Board, the money advanced by the regents shall be refunded.

THE DR. HORACE BRUCE HETRICK SCHOLARSHIP

(Value \$250.00)

This scholarship was established by Dr. Horace Bruce Hetrick as a memorial to his sons, Bruce Hayward Hetrick and Augustus Christian Hetrick. It is to be awarded by the Advisory Board of the Faculty to a student of the senior class.

THE HENRY ROLANDO SCHOLARSHIP

(Value approximately \$250.00)

The Henry Rolando Scholarship was established by the Board of Regents of the University of Maryland from a bequest to the Board by the late Anne H. Rolando for the use of the Faculty of Medicine.

This scholarship will be awarded each academic year on the recommendation of the Advisory Board of the Faculty to a "poor and deserving student."

THE READ SCHOLARSHIPS

The sum of \$500.00 is now available to cover two (2) scholarships in the amount of \$250.00 each for a given academic year. Beginning in 1945, these scholarships were made possible by a donation from the Read Drug and Chemical Company of Baltimore, Maryland. Two students are to be selected by the Dean of the School of Medicine in collaboration with the Scholarship and Loan Commit-

tees of the Medical School with the provision that the students selected shall be worthy, deserving students, residents of the State of Maryland.

THE PFIZER SCHOLARSHIP FUND

This fund has been made possible for the session 1952-53 through the generosity of the Chas. Pfizer & Co., Inc. who have made available \$1,000 to be distributed on recommendations of the Scholarship and Loan Committee and with the approval of the Dean. The donations from this fund will be allocated to deserving students on the basis of proven need, character and scholastic attainment.

LOAN FUNDS

W. K. KELLOGG FUND

This loan fund was established in the academic year 1942 with money granted by the W. K. Kellogg Foundation. The interest paid on the loans, together with the principal of the fund as repaid, will be used to found a rotating loan fund. Loans will be made on the basis of need, character and scholastic attainment.

FACULTY OF MEDICINE LOAN FUND

A Faculty of Medicine Loan Fund was established with money derived from the bequest of Dr. William R. Sanderson, Class 1882, and the gift of Dr. Albert Stein, Class 1907. Loans will be made on the basis of need, character, and scholastic ability.

THE EDWARD L. MEIERHOF LOAN FUND

This bequest was established through a grant from Dr. Edward L. Meierhof, who was graduated from the Medical School in 1881. The principal of this fund will be used as a rotating loan fund from which loans will be made to regularly enrolled students of the School of Medicine on the basis of need, character and scholastic attainment.

THE JAY W. EATON LOAN FUND

This fund was established by the local chapter of the Nu Sigma Nu Fraternity in memory of Jay W. Eaton of the class of 1946.

Beginning in 1946 an interest-free loan of \$100.00 will be made to some worthy member of the senior class, on recommendation of the Scholarship Committee of the School of Medicine. This loan is to be credited to the tuition fee of the appointed student and is to be repaid by the student within four years following his graduation.

THE SENIOR CLASS LOAN FUND

The senior class of 1945 originated this fund which will accumulate by subscription from among members of each senior class.

The conditions of the agreement provide that the dean of the School of Medicine award a loan of \$100.00 to a needy member of the senior class on the recommendation of a self-perpetuating committee of two members of the faculty.

Loans from this fund are to be credited to the tuition fee of the appointed student and are to be repaid within five years from the date of graduation.

THE STUDENT AID FUND FOR SENIORS

This fund was originated by the class of 1950 and is sponsored by the senior class of each succeeding year. The purpose of the fund is to provide financial aid for any deserving member of the senior class. All members of the senior class are eligible to apply for a loan. Applications may be filed at the office of the dean.

The conditions of the agreement provide that the Scholarship and Loan Committee award loans to members of the senior class on recommendation of a self-perpetuating committee of two members of the faculty who may call on the president of the senior class for assistance, if desired.

Loans from this fund are made on a non-interest bearing basis and are payable within five years. A signed note is required. No co-signers are necessary.

ORGANIZATION OF THE CURRICULUM

The curriculum is organized under fifteen departments.

1. Anaesthesiology.
2. Anatomy (including Histology, Embryology, and Neuro-anatomy).
3. Bacteriology and Immunology.
4. Biological Chemistry.
5. Gynecology.
6. Medicine (including Medical Specialties).
7. Obstetrics.
8. Ophthalmology.
9. Pathology.
10. Pediatrics.
11. Pharmacology.
12. Physiology.
13. Psychiatry.
14. Roentgenology.
15. Surgery (including Surgical Specialties).

The instruction is given in four academic years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures, functions and chemistry of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in medicine and surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the requirements of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

ANAESTHESIOLOGY .

.....	Professor of Anaesthesiology and Head of the Department
.....	Associate Professor of Anesthesiology
.....	Assistant Professor of Anesthesiology
.....	Associate in Anaesthesiology
JAMES RUSSO.....	Assistant in Anaesthesiology

THIRD YEAR

Lectures are given on the general physiology and pharmacology of anesthesia, with consideration of the special physiology and pharmacology of each anaesthetic agent. The methods of induction and administration of anaesthesia are discussed. The factors influencing the selection of the anaesthetic are emphasized, and the preparation and care of the anaesthetized patient are carefully explained.

These lectures are correlated with practical demonstrations, supplemented by lantern slides and motion pictures, at the University Hospital.

FOURTH YEAR

Each senior student is required to spend six hours per week for four weeks observing and administering anaesthetics in the operating room.

Third year.....	10 hours
Fourth year.....	24 hours
Total.....	34 hours

ANATOMY

Gross Anatomy

EDUARD UHLENHUTH.....	Professor of Anatomy and Head of the Department
VERNON E. KRAHL.....	Associate Professor of Anatomy
KARL F. MECH.....	Assistant Professor of Anatomy
DEWITT T. HUNTER, JR.....	Instructor in Anatomy
ROBERT E. McCAFFERTY.....	Instructor in Anatomy
NATHAN SNYDER.....	Instructor in Anatomy of the Eye, Ear, Nose and Throat
GLADYS E. WADSWORTH.....	Instructor in Anatomy
WILLIAM E. LOECHEL.....	U. S. P. H. S. Medical Artist

Histology, Embryology and Neuro-Anatomy

FRANK H. J. FIGGE.....	Professor of Anatomy
O. G. HARNE.....	Associate Professor of Anatomy
JOHN F. LUTZ.....	Assistant Professor of Anatomy
H. PATTERSON MACK.....	Associate in Anatomy
GERALDINE F. WOLFE.....	Assistant in Anatomy
V. V. BRUNST.....	Research Associate in Anatomy
GEORGE C. PECK.....	John F. B. Weaver Summer Fellow in Histology and Embryology
VERNON M. GELHAUS.....	John F. B. Weaver Summer Fellow in Histology and Embryology

Surgical Anatomy

OTTO C. BRANTIGAN.....	Professor of Surgical Anatomy
W. WALLACE WALKER.....	Associate Professor of Surgical Anatomy

WILLIAM B. SETTLE.....	Assistant Professor of Surgical Anatomy
HERBERT E. REIFSCHNEIDER.....	Associate in Surgical Anatomy
HARRY C. BOWIE.....	Associate in Surgical Anatomy
ROSS Z. PIERPONT.....	Associate in Surgical Anatomy
RICHARD M. GARRETT	Instructor in Surgical Anatomy

GROSS ANATOMY. *First Year.* First semester. The gross structure of the human body, studied by dissection of the human cadaver. The entire human body is dissected. Approximately 370 hours; of these 80 hours are devoted to lectures and conferences, the rest to laboratory work and demonstrations. Drs. Uhlenhuth, Krah, Mech, Hunter, McCafferty and Miss Wadsworth.

First Year. First Semester. Peripheral Nervous System. A lecture course of approximately 32 hours, in two-hour periods each Saturday morning. Dr. Uhlenhuth.

HISTOLOGY AND EMBRYOLOGY *First Year.* First Semester. The Microscopic Structure of the Organs, Tissues and Cells of the Human Body.

This course will present an integrated study of the histology and embryology of the human body.

An attempt will be made to correlate this with gross anatomy as well as other subjects in the medical curriculum. Special emphasis will be placed on the dynamic and functional aspects of the subject. 150 hours. Dr. Figge, Prof. Harne, Drs. Lutz, Mack, Brunst and Miss Wolfe.

NEUROANATOMY. *First Year.* Second Semester. The Central Nervous System. The study of the detailed anatomy of the central nervous system will be coordinated with the structure and function of the entire nervous system. This study will require the dissection of a human brain and the examination of stained microscopic sections of various levels of the brain stem. 100 hours. Dr. Figge, Prof. Harne, Drs. Lutz, Mack, Smith and Miss Wolfe.

SURGICAL ANATOMY. *Second Year.* Second Semester. Topographic and Surgical Anatomy. The course is designed to bridge the gap between abstract anatomy and clinical anatomy as applied to the study and practice of medicine and surgery. Students are required to dissect and demonstrate all points, outlines and regions of the cadaver. Underlying regions are dissected to bring outlines and relations of structures. Dr. Brantigan and staff.

Total hours: 96

GRADUATE AND POSTGRADUATE COURSES. Consult the general catalog of the University of Maryland for descriptions of these courses.

ART AS APPLIED TO MEDICINE

CARL DAME CLARKE	Associate Professor of Art as Applied to Medicine
THOMAS M. STEVENSON, JR.	Assistant in Art as Applied to Medicine
RAYMOND J. CLAYTON, JR.....	Assistant in Art as Applied to Medicine
JANE L. BLEAKLEY.....	Assistant in Art as Applied to Medicine
NANCY M. BALCHUN	Assistant in Art as Applied to Medicine

This department is maintained for the purpose of supplying pictorial and plastic illustrations for visual teaching in the classrooms of the medical school and for

publication in scientific periodicals. Research in prosthetics and the production of prosthetic appliances are also carried out in this department.

Special courses of instruction are given to qualified students.

BACTERIOLOGY AND IMMUNOLOGY

FRANK W. HACHTEL.....	Professor of Bacteriology and Head of the Department
EDWARD STEERS.....	Associate Professor of Bacteriology
ANDREW G. SMITH.....	Assistant Professor of Bacteriology
H. EDMUND LEVIN.....	Associate in Bacteriology
MERRILL J. SNYDER.....	Instructor in Bacteriology
ERNEST C. HERRMANN, JR....	Bressler Reserve Fund Research Associate in Bacteriology
NORMA MARY KEIGLER.....	Bressler Reserve Fund Research Assistant in Bacteriology
ROBERT C. WOOD.....	Bressler Reserve Fund Research Assistant in Bacteriology
MARY V. REED.....	Bressler Reserve Fund Research Assistant in Bacteriology

Second Year. First Semester. The principles of general bacteriology are taught by quiz, conference, and lecture.

Instruction given in the laboratory includes the methods of preparation of culture media, the study of pathogenic bacteria, and the bacteriological examination of water and milk. The bacteriological diagnosis of communicable diseases is also included.

Second Year. Second Semester. The principles of immunology are presented by means of quizzes, conferences and lectures.

The course includes a consideration of infection and immunity, the nature and action of the various antibodies, complement fixation and flocculation tests, hypersensitiveness, and the preparation of bacterial vaccines.

Experiments are carried out by the class in the laboratory. During the latter half of the semester the class is divided into sections.

Total hours: Bacteriology 150.

Immunology 72.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

BIOLOGICAL CHEMISTRY

EMIL G. SCHMIDT.....	Professor of Biological Chemistry and Head of the Department
EDWARD J. HERBST.....	Associate Professor of Biological Chemistry
RAYMOND E. VANDERLINDE.....	Assistant Professor of Biological Chemistry
WILLIAM H. SUMMERSON.....	Lecturer in Biological Chemistry
ANN VIRGINIA BROWN.....	Instructor in Biological Chemistry
JEAN D. GARDENIER.....	Research Assistant in Biological Chemistry
ELEANOR B. GLINOS.....	Research Assistant in Biological Chemistry
PATRICIA S. THORPE.....	Research Assistant in Biological Chemistry
DOROTHY D. HUBBARD.....	Research Corporation and Bressler Reserve Fund Post Doctorate Fellow in Biological Chemistry
GERALD KESSLER.....	Nutrition Foundation Fellow in Biological Chemistry
FRANK D. VASINGTON.....	Bressler Reserve Fund Fellow in Biological Chemistry
ALVAN NATHAN GESER.....	Bressler Reserve Fund Fellow in Biological Chemistry

First Year. Second Semester. This course is designed to present the principles of biological chemistry and to indicate their applications to the clinical aspects of medicine. The phenomena of living matter and its chief ingredients, secretions and excretions are discussed in lectures and conferences and examined experimentally. Training is given in biochemical methods of investigation. Total hours: 208.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

CARDIOLOGY

[A DIVISION OF MEDICINE]

In the third year a series of lectures and clinics correlated with pathological studies is given the entire class.

In the fourth year students are assigned for two periods weekly for five weeks to the Cardiac Clinic and attend consultation rounds and conferences on cardiovascular cases on the Medical wards.

CLINICAL PATHOLOGY

[A DIVISION OF MEDICINE]

MILTON S. SACKS.....	Associate Professor of Medicine and Head of the Division of Clinical Pathology
MARIE A. ANDERSCH.....	Assistant Professor of Biochemistry in Medicine
JOSEPH B. WORKMAN.....	Associate in Medicine
L. ANN HELLEN.....	Instructor in Medicine
AUDREY M. FUNK.....	Instructor in Medicine
PERRY O. FUTTERMAN.....	Instructor in Medicine
STANLEY MILLER.....	Instructor in Medicine
WILLIAM G. ESMOND.....	Baltimore RH Laboratory Fellow in Medicine

Third Year. First and second semesters. The course in Clinical Pathology is designed to train the student in the performance and interpretation of fundamental diagnostic laboratory procedures used in clinical medicine.

During the first semester the work is devoted to a thorough consideration of diseases of the hematopoietic system. In the second semester, laboratory work in urinalysis, gastric analysis, hepatic, pancreatic and renal functions, together with a thorough discussion of underlying biochemical and physiological mechanisms is undertaken. During this semester examination of cerebrospinal fluid, transudates and exudates is included. Elements of clinical parasitology complete the work in this semester.

Each student provides his own microscope and blood counting equipment. A completely equipped locker is assigned to every student.

Total Hours: 128.

Fourth Year. During the fourth year the student applies in the laboratories of the various affiliated hospitals the knowledge acquired during the preceding year. A completely equipped locker is assigned enabling him to work independent of the general laboratories. Instructors are available during certain hours to give necessary assistance and advice.

DENTISTRY

[A DIVISION OF SURGERY]

¹ BRICE M. DORSEY	Professor of Oral Surgery
¹ MYRON S. AISENBERG	Professor of Pathology
¹ JOSEPH C. BIDDIX, JR.	Professor of Oral Diagnosis
¹ KYRLE W. PREIS	Professor of Orthodontics
¹ HARRY M. ROBINSON, SR.	Professor of Dermatology
¹ GRAYSON W. GAVER	Professor of Dental Prosthesis
¹ ERNEST B. NUTTALL	Professor of Crown and Bridge
¹ KENNETH V. RANDOLPH	Professor of Operative Dentistry
¹ EDWARD C. DOBBS	Professor of Pharmacology
GEORGE H. YEAGER	Professor of Clinical Surgery
GRANT E. WARD	Associate Professor of Surgery and Oral Surgery
¹ HUGH H. HICKS	Associate Professor of Periodontology
¹ LEWIS C. TOOMEY	Associate Professor of Oral Surgery
GEORGE MCLEAN	Assistant Professor of Medicine
¹ WILBUR O. RAMSAY	Assistant Professor of Clinical Dental Prosthesis
¹ SAMUEL H. BRYANT	Instructor in Oral Diagnosis
¹ RUSSELL GIGLIOTTI	Instructor in Clinical Oral Diagnosis
¹ JOSEPH P. CAPPUCCIO	Instructor in Oral Surgery
¹ CONRAD L. INMAN	Instructor in Anesthesiology

This section has been reorganized for the teaching of both medical and dental students. There has been established a division in the out-patient department, and beds will be provided in the University Hospital, for the care of patients who will be available for the teaching of students from both schools.

Senior year: clinics weekly.

Ward instruction and group teaching are given. This includes diagnosis and treatment of diseases of the face, mouth and jaws.

DERMATOLOGY AND SYPHILOLOGY [A DIVISION OF MEDICINE]

HARRY M. ROBINSON, SR.	Professor of Dermatology
FRANCIS A. ELLIS	Associate Professor of Dermatology
HARRY M. ROBINSON, JR.	Associate Professor of Dermatology
EUGENE S. BERESTON	Assistant Professor of Dermatology
A. ALBERT SHAPIRO	Assistant Professor of Dermatology
ISRAEL ZELIGMAN	Assistant Professor of Dermatology
R. C. V. ROBINSON	Assistant Professor of Dermatology
WILLIAM R. BUNDICK	Associate in Dermatology
MARK B. HOLLANDER	Instructor in Dermatology
MORRIS M. COHEN	Instructor in Dermatology
DAVID BACHARACH	Instructor in Dermatology
LEE R. LERMAN	Assistant in Dermatology

The third year class receives six lecture-demonstrations on the principles of dermatology by Dr. Robinson.

The senior course consists of conferences and demonstrations of the common

¹ Faculty Member, School of Dentistry.

skin diseases and venereal diseases in the outpatient dermatologic and syphilis clinics and on the medical wards.

GASTRO-ENTEROLOGY [A DIVISION OF MEDICINE]

THEODORE H. MORRISON.....	Clinical Professor of Gastro-Enterology
SAMUEL MORRISON.....	Associate Professor of Gastro-Enterology
MAURICE FELDMAN.....	Assistant Professor of Gastro-Enterology
ZACHARIAH MORGAN.....	Assistant Professor of Gastro-Enterology
FRANCIS G. DICKEY.....	Associate in Medicine
Z. VANCE HOOPER.....	Associate in Gastro-Enterology
ALBERT J. SHOCHAT.....	Instructor in Gastro-Enterology
PHILIP D. FLYNN.....	Instructor in Medicine
ALFRED S. LEDERMAN.....	Assistant in Gastro-Enterology

Third Year. A series of six lectures is given on the diseases of the digestive tract.

Fourth Year. Students attend the gastro-intestinal clinic for two periods weekly for five weeks, and consultation rounds on gastro-intestinal cases on the Medical wards. Practical instruction is given in the use of modern methods of study of the diseases of the gastro-intestinal tract.

GYNECOLOGY

J. MASON HUNDLEY, JR.....	Professor of Gynecology, and Head of the Department
LEO BRADY.....	Assistant Professor of Gynecology
EDWARD P. SMITH.....	Assistant Professor of Gynecology
WILLIAM K. DIEHL.....	Assistant Professor of Gynecology
EVERETT S. DIGGS.....	Assistant Professor of Gynecology
BEVERLEY C. COMPTON.....	Assistant Professor of Gynecology
ERNEST I. CORNBROOKS, JR.....	Assistant Professor of Gynecology
J. J. ERWIN.....	Associate in Gynecology
FRANK K. MORRIS.....	Associate in Gynecology
GERALD A. GALVIN.....	Associate in Gynecology
JOHN T. HIBBITTS.....	Associate in Gynecology
KENNETH B. BOYD.....	Associate in Gynecology
THEODORE KARDASH.....	Instructor in Gynecology
CHARLES B. MAREK.....	Instructor in Gynecology
THOMAS S. BOWYER.....	Instructor in Gynecology
ERNEST S. EDLOW.....	Instructor in Gynecology
W. ALLEN DECKERT.....	Instructor in Gynecology
HELEN I. MAGINNIS.....	Instructor in Gynecology
CHARLES H. DOELLER, JR.....	Instructor in Gynecology
WILLIAM A. DODD.....	Instructor in Gynecology
HARRY McB. BECK.....	Instructor in Gynecology
WILLIAM C. DUFFY.....	Instructor in Gynecology
JOSEPH C. SHEEHAN.....	Instructor in Gynecology
WILLIAM J. RYSANEK.....	Instructor in Gynecology
HARRY F. KANE.....	Instructor in Gynecology
ROBERT B. TUNNEY.....	Instructor in Gynecology

JAMES H. SHELL, JR.....	Assistant in Gynecology
THOMAS A. STEBBINS.....	U.S.P.H.S., Cancer Teaching Fund Medical Illustrator in Oncology and Gynecology
AMY LEE WELLS.....	Research Assistant in Gynecological Pathology

Third Year. A comprehensive course of 30 lectures in the field of gynecology, female urology, and female oncology is given to the entire class.

Fourth Year. An intensive course is given to small groups of students throughout the year, during which time the students are assigned exclusively to this department. The course consists of instructions including lectures, seminars, ward rounds, and operative clinics. In addition, two special instruction periods are given in pathology at which time a review of the pathological material seen at operation is made with especial reference to the pathology of malignant disease. The students are assigned patients on the gynecological wards, and also work in the gynecological, cystoscopy and oncology dispensaries each day.

Third year.....	30 hours
Fourth year.....	75 hours
Total:.....	105 hours

HISTORY OF MEDICINE

LOUIS A. M. KRAUSE.....	Professor of Clinical Medicine
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Beginning with the spring of 1942 a group of lectures on the history of medicine has been presented on selected phases and trends of the development of medical knowledge and practice. It is planned to avoid duplication of subject matter for at least four years.

These lectures are offered primarily for our students, but a cordial invitation is extended to anyone who may wish to attend.

Announcement of the lectures will be made by mail and on the bulletin board of the School of Medicine.

HYGIENE AND PUBLIC HEALTH [A DIVISION OF MEDICINE]

HUNTINGTON WILLIAMS.....	Professor of Hygiene and Public Health
WILLIAM H. F. WARTHEN.....	Associate Professor of Hygiene and Public Health
ROSS DAVIES.....	Associate Professor of Hygiene and Public Health
MATTHEW L. TABACK.....	Assistant Professor of Hygiene and Public Health

Third Year. A one-hour lecture is given to the whole class each Tuesday during both semesters. Basic instruction is afforded in the clinical and public health aspects of the communicable diseases including syphilis and tuberculosis. The lectures are under the auspices of the Department of Medicine and are given by staff members of that department, including physicians representing pediatrics, hygiene and public health, and by staff members of the Baltimore City Health Department.

Fourth Year. Elective work is also assigned at the Western Health District Building of the City Health Department, 617 West Lombard Street, where the District Health Officer arranges for home visiting and the student prepares and presents a Home Survey Report.

The course deals with the fundamentals of public health and supplements the work in the third year. The major emphasis in both years is on the practice of preventive medicine and the relation of prevention to diagnosis and treatment, and on the civic and social implications of the medical services.

BIOSTATISTICS

First Year. A series of 15 one hour lectures is given to the whole class during the Second Semester dealing with the basic methods of statistical analysis and demonstration of their use in several areas of medical investigation.

Instruction is designed to assist the medical student in evaluating quantitative aspects of medical information.

INDUSTRIAL MEDICINE AND SURGERY [A DIVISION OF SURGERY]

CHARLES A. REIFSCNEIDER.....Clinical Professor of Traumatic Surgery
THURSTON R. ADAMS.....Assistant Professor of Surgery

This section is under the combined supervision of the medical and surgical departments. It is a cooperative effort by members of the medical school and hospital staff to afford means for clinical and laboratory study of the patient who has been subjected to traumatic or medical industrial hazard, so that adequate care may be instituted to promote his physical well-being. The facilities of the laboratories of the medical school and hospital are available as required.

Under direction of this department limited undergraduate instruction is given, especially in the methods of examination and of keeping records and in the general medico-legal principles as they affect the industrial employee, the employer, the general insurers, the physician and the hospital. There is also instruction on methods of making life insurance and other physical examinations, whether for employment or for health purposes. The wards of the University, Mercy and Baltimore City Hospitals provide for bed-side instruction.

Total hours: 8.

LEGAL MEDICINE [A DIVISION OF MEDICINE]

RUSSELL S. FISCHER.....Professor and Head of the Division of Legal Medicine
STANLEY H. DURLACHER.....Assistant Professor of Legal Medicine
HENRY C. FREIMUTH.....Associate in Legal Medicine
WILLIAM J. MCCLAFFERTY.....Associate in Legal Medicine
RICHARD LINDENBERG.....Associate in Legal Medicine
WILLIAM V. LOVITT, JR. Associate in Legal Medicine
KENNETH F. CLUTE.....Research Associate in Legal Medicine
ARTHUR J. FISK.....Research Assistant in Legal Medicine
ELLA FREYTAG.....Research Assistant in Legal Medicine

Third Year. This course embraces a summary of medical jurisprudence including the laws governing the practice of medicine, industrial compensation and malpractice, proceedings in criminal and civil prosecution, medical evidence and testimony, identification of bodies, injuries by blunt force, gunshot and other mechanisms, natural and homicidal deaths, medicolegal toxicology and the medico-legal autopsy. (12 hours.)

Elective Course (summer). A small number of students may upon application be assigned to elective work in the laboratory of the Chief Medical Examiner of the State of Maryland.

MEDICINE

MAURICE C. PINCOFFS.....	Professor of Medicine and Head of the Department
T. NELSON CAREY.....	Professor of Clinical Medicine
THOMAS P. SPRUNT.....	Professor of Clinical Medicine
H. RAYMOND PETERS.....	Professor of Clinical Medicine
LOUIS A. M. KRAUSE.....	Professor of Clinical Medicine
WILLIAM S. LOVE, JR.....	Associate Professor of Medicine
THOMAS C. WOLFF.....	Associate Professor of Medicine
HOWARD M. HUBERT.....	Associate Professor of Medicine
J. SHELDON EASTLAND.....	Associate Professor of Medicine
MILTON S. SACKS.....	Associate Professor of Medicine
LEWIS P. GUNDRY.....	Associate Professor of Medicine
SAMUEL MORRISON.....	Associate Professor of Medicine
THEODORE E. WOODWARD.....	Associate Professor of Medicine
WILLIAM H. SMITH.....	Associate Professor of Clinical Medicine
GEORGE MCLEAN.....	Assistant Professor of Medicine
WETHERBEE FORT.....	Assistant Professor of Medicine
FRANK J. GERAGHTY.....	Assistant Professor of Medicine
H. VERNON LANGE LUTTIG.....	Assistant Professor of Medicine
SOL SMITH.....	Assistant Professor of Medicine
EDWARD F. COTTER.....	Assistant Professor of Medicine
C. EDWARD LEACH.....	Assistant Professor of Medicine
EPHRAIM T. LISANSKY.....	Assistant Professor of Medicine
SAMUEL T. R. REVELL, JR.....	Assistant Professor of Medicine
HENRY J. MARRIOTT.....	Assistant Professor of Medicine
ROBERT A. REITER.....	Assistant Professor of Medicine
SIDNEY SCHERLIS.....	Assistant Professor of Medicine
JAMES R. KARNS.....	Assistant Professor of Medicine
MARIE A. ANDERSCH.....	Assistant Professor of Biochemistry in Medicine
SAMUEL LEGUM.....	Associate in Medicine
W. GRAFTON HERSPBERGER.....	Associate in Medicine
MEYER W. JACOBSON.....	Associate in Medicine
CONRAD B. ACTON.....	Associate in Medicine
FRANCIS G. DICKEY.....	Associate in Medicine
LAWRENCE M. SERRA.....	Associate in Medicine
HARRY M. ROBINSON, JR.....	Associate in Medicine
WILLIAM K. WALLER.....	Associate in Medicine
ARTHUR KARFGIN.....	Associate in Medicine
M. PAUL BYERLY.....	Associate in Medicine
HENRY W. D. HOLLJES.....	Associate in Medicine
S. EDWIN MULLER.....	Associate in Medicine
KURT LEVY.....	Associate in Medicine
WILFRED H. TOWNSHEND.....	Associate in Medicine
ALVIN J. HARTZ.....	Associate in Medicine
EDMUND G. BEACHAM.....	Associate in Medicine
LOUIS V. BLUM.....	Associate in Medicine
LEON ASHMAN.....	Associate in Medicine

DANIEL WILFSON, JR.	Associate in Medicine
JONAS COHEN	Associate in Medicine
WALTER KARFGIN	Associate in Medicine
IRVING FREEMAN	Associate in Medicine
J. EMMET QUEEN	Associate in Medicine
CHARLES F. BRAMBLE	Associate in Medicine
JOHN B. DEHOFF	Associate in Medicine
WILLIAM C. EBELING, III	Associate in Medicine
JOSEPH FURNARI	Associate in Medicine
ROBERT E. BAUER	Associate in Medicine
PHILIP D. FLYNN	Instructor in Medicine
JOHN A. MYERS	Instructor in Medicine
WILLIAM G. HELFRICH	Instructor in Medicine
JOSEPH E. MUSE	Instructor in Medicine
WILLIAM H. KAMMER, JR.	Instructor in Medicine
SAMUEL J. HANKIN	Instructor in Medicine
FREDERICK J. VOLLMER	Instructor in Medicine
JOHN R. DAVIS	Instructor in Medicine
L. ANN HELLEN	Instructor in Medicine
AUDREY M. FUNK	Instructor in Medicine
LEON A. KOCHMAN	Instructor in Medicine
C. HERMAN WILLIAMS	Instructor in Medicine
JEROME SHERMAN	Instructor in Medicine
PERRY O. FUTTERMAN	Instructor in Medicine
ELIZABETH D. SHERRILL	Instructor in Medicine
WILLIAM F. COX, III	Instructor in Medicine
DONALD W. MINTZER	Instructor in Medicine
BERNARD BURGIN	Instructor in Medicine
LAURISTON L. KEOWN	Instructor in Medicine
FRANKLIN E. LESLIE	Instructor in Medicine
PHILIP D. FLYNN	Instructor in Medicine
ROBERT T. PARKER	Instructor in Medicine
STEPHEN J. VAN LILL, III	Instructor in Medicine
STUART D. SUNDAY	Instructor in Medicine
IRVIN B. KEMICK	Instructor in Medicine
MAURICE FELDMAN, JR.	Instructor in Medicine
JAMES J. NOLAN	Instructor in Medicine
CHARLES E. SHAW	Instructor in Medicine
JOSEPH G. BIRD	Instructor in Medicine
LEONARD SCHERLIS	Instructor in Medicine
STANLEY MILLER	Instructor in Medicine
JOHN C. OSBORNE	Instructor in Medicine
ROLLIN C. HUDSON	Assistant in Medicine
RAYMOND M. LAUER	Assistant in Medicine
BURTON V. LOCK	Assistant in Medicine
CARL F. MYERS	Assistant in Medicine
JACK WEXLER	Assistant in Medicine
MARVIN GOLDSTEIN	Assistant in Medicine
JOSEPH C. MYERS	Assistant in Medicine
THOMAS WORSLEY	Assistant in Medicine
EDWARD S. KALLINS	Assistant in Medicine

HERBERT J. LEVICKAS.....	Assistant in Medicine
JOSEPH CHARLES MATCHAR.....	Assistant in Medicine
JOSEPH C. BLAZEK.....	Assistant in Medicine
WILLIAM G. ESMOND.....	Baltimore Rh Typing Laboratory Fellow in Medicine
FRANCIS J. BORGES.....	Part-Time Fellow in Medicine
KYLE W. SWISHER, JR.....	Part-Time Fellow in Medicine
JOSEPH B. BRONUSHAS.....	Part-Time Fellow in Medicine
JOSEPH C. FITZGERALD.....	Part-Time Fellow in Medicine
HARRY D. PERRY JR.....	Part-Time Fellow in Medicine
AUBREY RICHARDSON.....	Part-Time Fellow in Medicine
AWILDA GAY.....	Research Assistant in Medicine

SECOND YEAR

Introduction to clinical medicine.

- (a) Introductory physical diagnosis. (1 hour a week, first semester; 2 hours a week, second semester.)
- (b) Medical clinics. (1 hour a week, second semester.)

THIRD YEAR

- I. The methods of examination: (a) History taking. (b) Physical diagnosis. (c) Clinical pathology.

Instruction includes lectures and practice in the wards, outpatient department and laboratory.

- II. The principles of medicine:

- (a) Lectures, clinics and demonstrations in general medicine, neurology, and preventive medicine.

Third Year teaching of physical diagnosis is carried out chiefly in the various units of the City Hospital.

FOURTH YEAR

The practice of medicine:

- I. Clinical clerkship on the medical wards (31 hours a week for ten weeks).

- (a) Responsibility, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases.

- (b) Ward classes, ward rounds and conferences in general medicine, the medical specialties, and therapeutics.

- II. Dispensary work in the medical specialties.

- III. Clinical-pathological conferences (1 hour a week).

The medical dispensary of the University Hospital is utilized for teaching in the third year. Each student spends two hours daily for ten weeks in dispensary work. The work is done in groups of four to six students under an instructor. Systematic history-taking is especially stressed. Physical findings are demonstrated. The student becomes familiar with the commoner acute and chronic disease processes.

Clinical clerkships in the Fourth Year are served on the medical wards of both the University and Mercy Hospitals.

NEUROLOGICAL SURGERY [A DIVISION OF SURGERY]

JAMES G. ARNOLD, JR.

Associate Professor of Neurological Surgery. Acting Head of the Department

RICHARD G. COBLENTZ.....Professor of Clinical Neurological Surgery
 JOHN A. WAGNER.....Associate Professor of Pathology and Neuropathology
 ROBERT OSTER

Associate in Electro-physiology, and Director of the Hoffberger Electroencephalo-
 graphic Laboratory

RAYMOND K. THOMPSON

Associate in Neurological Surgery, Director of Neurological Surgery Research

FRANK J. OTENASEK.....Instructor in Neurological Surgery
 JOHN W. CHAMBERS.....Instructor in Neurological Surgery
 ROBERT M. N. CROSBY.....Instructor in Neurological Surgery
 WILLIAM H. MOSSBERG, JR.....Instructor in Neurosurgery
 AUGUST KIEL, JR.....Assistant in Neurological Surgery

Third Year. This course comprises lectures and demonstrations in the fundamentals of neurological surgery. Total hours, fifteen

Fourth Year. Weekly ward rounds at the University and Mercy Hospitals. Total hours, sixteen.

Dispensary Instruction. A small number of students may apply for instruction in the neurological out-patient dispensary.

NEUROLOGY

[A DIVISION OF MEDICINE]

LEON FREEDOM.....Associate Professor of Neurology
 PHILIP F. LERNER.....Assistant Professor of Neurology
 HARRY TEITELBAUM.....Assistant Professor of Neurology
 WILLIAM L. FEARING.....Associate in Neurology
 EDWARD F. COTTER.....Associate in Neurology
 GEORGE G. MERRILL.....Associate in Neurology

Second Year. Fifteen one-hour lectures are given to correlate the anatomy and physiology of the nervous system with clinical neurology.

Third Year. Twenty hours of instruction are given to the whole class in neuropathology supplemented with pathological demonstrations. Sixteen lecture-demonstrations are given in which the major types of the diseases of the nervous system are discussed. A course is also given at the Baltimore City Hospitals, comprising eight periods of two hours each, in which the students in small groups carry out complete neurological examinations of selected cases which illustrate the chief neurological syndromes.

Fourth Year. Fourth year students in the Medical section attend neurological consultation rounds on ward patients in the University and Mercy Hospitals. All patients presented at these clinics are carefully examined.

Dispensary Instructions. Small sections are instructed in the neurological dispensary of the Mercy Hospital five afternoons each week. In this way students are brought into contact with nervous diseases in their early and late manifestations.

OBSTETRICS

LOUIS H. DOUGLASS.....Professor of Obstetrics and Head of the Department
 J. MORRIS REESE.....Associate Professor of Obstetrics
 D. FRANK KALTREIDER.....Associate Professor of Obstetrics

ISADORE A. SIEGEL.....	Associate Professor of Obstetrics
JOHN E. SAVAGE	Assistant Professor of Obstetrics
HUGH B. McNALLY.....	Assistant Professor of Obstetrics
MARGARET B. BALLARD.....	Associate in Obstetrics
D. McCLELLAND DIXON.....	Associate in Obstetrics
OSBORNE C. CHRISTENSEN.....	Associate in Obstetrics
J. TYLER BAKER.....	Associate in Obstetrics
J. HUFF MORRISON.....	Associate in Obstetrics
GEORGE H. DAVIS.....	Instructor in Obstetrics
J. KING B. E. SEEGAR.....	Instructor in Obstetrics
VINCENT DEPAUL FITZPATRICK, JR.....	Assistant in Obstetrics
LOUIS C. GAREIS.....	Instructor in Obstetrics
KENNETH B. BOYD.....	Assistant in Obstetrics
W. KENNETH MANSFIELD, JR.....	Assistant in Obstetrics
CHARLES H. DOELLER, JR.....	Assistant in Obstetrics
THEODORE KARDASH.....	Assistant in Obstetrics
HARRY MCB. BECK.....	Assistant in Obstetrics
WILLIAM A. DODD.....	Assistant in Obstetrics
IRVIN P. KLEMKOWSKI.....	Assistant in Obstetrics
CLARENCE W. MARTIN.....	Assistant in Obstetrics
VERNON C. KELLEY.....	Assistant in Obstetrics
HARRY COHEN.....	Assistant in Obstetrics
THOMAS C. WEBSTER.....	Assistant in Obstetrics
VINCENT DEP. FITZPATRICK.....	Assistant in Obstetrics
ERNEST SCHER.....	Assistant in Obstetrics
JAMES H. SHELL, JR.....	Assistant in Obstetrics
F. X. PAUL TINKER.....	Assistant in Obstetrics
DANIEL EHRLICH.....	Assistant in Obstetrics
BENSON C. SCHWARTZ.....	Assistant in Obstetrics

Second Year: During the second semester lectures are given one hour weekly. Students are oriented on the normal pelvis, generative tract and the physiology of pregnancy and labor. The conduct of normal delivery and the puerperium are explained, and in general an attempt is made to prepare the student for the practical training he is to receive in his third year. Dr. J. M. Reese.

Third Year: Lectures and recitations consist of 3 hours teaching weekly and are designed to cover the anatomy more completely, especially that of the bony pelvis from an obstetrical point of view. Physiology of the endocrine system is reviewed as it relates to pregnancy and the growth and development of the impregnated ovum. Following this the pathology of pregnancy, labor and the puerperium are considered. Drs. Douglass, Reese, Siegel, Savage, Dixon and Kaltreider.

Each student is required to spend 4 days on the obstetrical service of the Baltimore City Hospitals during his junior year. Here he acts as a junior intern, observing, assisting and finally delivering normal cases under supervision. Each student attends a total of about 25 deliveries, in the majority of which he takes an active part.

Each student receives, as a member of a small group, 10 hours of instruction in palpating patients, in the clinical evaluation of the pelvis and in demonstrations

of the mechanism of labor. Drs. Siegel and McNally.

Fourth Year: The instruction is entirely clinical. The "block system" is used. One-sixteenth of the class is assigned to obstetrics only for a period of 2 weeks. Students live at the University Hospital during this time and are on call 24 hours a day. They receive formal class instruction, are required to attend all rounds and staff conferences and are present at the majority of the deliveries as observers, assistants or as accoucheurs. In this way each student will actively participate in about 11 deliveries. Operative work on an obstetrical mannikin is an organized part of the course. Each student receives 6 hours of this type of instruction.

Each student spends 20 hours in the prenatal and postnatal clinics, where instructions in these fields are given.

Students assigned to obstetrics are required to attend the monthly meetings of The Committee on Maternal Mortality of Baltimore, where all maternal deaths occurring in this city are presented and discussed.

Second year— 16 hours

Third year—148 hours

Fourth year—106 hours

Total —270 hours

ONCOLOGY [A DIVISION OF GYNECOLOGY AND SURGERY]

J. MASON HUNDLEY, JR.....	Professor of Gynecology
BEVERLEY C. COMPTON.....	Assistant Professor of Gynecology
WILLIAM K. DIEHL.....	Assistant Professor of Gynecology
EVERETT S. DIGGS.....	Assistant Professor of Gynecology
ERNEST I. CORNBROOKS, JR.....	Assistant Professor of Gynecology
ARTHUR G. SIWINSKI.....	Assistant Professor of Surgery
EDWIN H. STEWART.....	Associate in Surgery
JOHN M. DENNIS.....	Associate in Radiology
J. DUER MOORES.....	Instructor in Surgery
LOUIS F. GOODMAN.....	Instructor in Surgery
GIRARDO B. POLANCO.....	National Cancer Institute Trainee in Pathology
E. EUGENE COVINGTON.....	Assistant Radiologist
THOMAS A. STEBBINS.....	U.S.P.H.S., Cancer Teaching Fund Medical Illustrator in Oncology and Gynecology

The purpose of the courses in Oncology is to give students training in the diagnosis and treatment of neoplastic diseases not obtained in other departments and at the same time to correlate this training with that received in surgery, medicine, roentgenology and other specialties.

Third year. Six didactic lectures are given on the diagnosis and treatment of cancer of the generative organs. Dr. Hundley and staff.

Five lectures in general oncology are given to the entire Junior Class at the end of the year. The increasing importance of the cancer problem is emphasized. The biological aspects of cancer and the relation of hormones, carcinogenic agents, and etiological factors are discussed. The gradation of neoplasms, and the biophysical effects of irradiation therapy are presented. The diagnosis, surgical and radiological treatment of neoplasms of the head and neck, oral cavity, skin, breasts, and hemopoietic system are discussed. Dr. Siwinski and staff.

Fourth Year. Ten senior students of the University section are assigned to the Oncology clinic. Five students are assigned to the Tuesday morning clinic, and the alternate group to the Friday morning clinic. The diagnosis and treatment, both surgical and radiological are discussed in the presence of a staff member of the departments of Pathology, Radiology, and Surgery.

An outpatient Gynecological Clinic is held bi-weekly which affords an opportunity for instruction of small groups of students, which are assigned in rotation, in the various phases of malignancy of the generative organs. Weekly ward rounds and operative clinics are held for seniors.

	<i>Oncology</i>	<i>Gynecology</i>	<i>Total</i>
Third year.....	5 hours	6 hours	11 hours
Fourth year.....	<u>12</u> hours	<u>16</u> hours	<u>28</u> hours
Total.....	17 hours	22 hours	39 hours

OPHTHALMOLOGY

F. EDWIN KNOWLES, JR.

Assistant Professor of Ophthalmology and Chairman of the Department

JOSEPH I. KEMLER.....	Associate in Ophthalmology
A. KREMEN.....	Associate in Ophthalmology
PAUL N. FRIEDMAN.....	Instructor in Ophthalmology
RUBY A. SMITH.....	Instructor in Ophthalmology
D. J. McHENRY.....	Instructor in Ophthalmology
J. E. BRUMBACK.....	Instructor in Ophthalmology
RICHARD J. CROSS.....	Instructor in Ophthalmology
JOHN C. OZAZEWSKI.....	Assistant in Ophthalmology

Third Year. Second semester. Dr. Friedman reviews the anatomy and physiology of the eye and discusses the methods used in making the various examinations. Errors of refraction and their effect upon the general system are explained. Weekly section work, demonstrating the use of the ophthalmoscope, with the aid of kodachrome transparencies of the fundus oculi is carried on during the entire session at the Baltimore Eye, Ear, and Throat Hospital by Dr. Kremen.

Fourth Year. Clinics and demonstrations are given in diseases of the eye, twice weekly, for one year. Dr. Knowles.

The course consists of instruction in the clinic to small groups of students four days a week for four weeks. During this period, the student examines patients, diagnoses and treats various ocular diseases, under the supervision of Drs. Knowles, Smith, Brumback, Friedman and Ozazewski. Twice weekly lectures and lantern slide demonstration are given upon diseases of the eye, with particular reference to their diagnosis, management and relation to general medicine. Special lectures are given the entire class on vascular changes in the eye, refraction, cataract and neuro-ophthalmology. Certain operations are demonstrated by motion pictures.

Weekly ward classes are held at the University and Mercy Hospitals during which the eye grounds in the various medical and surgical conditions are demonstrated. Drs. Knowles, Kemler, Kremen, Friedman, Smith, Brumback, Jeppi, Pacienza and Ozazewski.

Third year	20 hours
Fourth year	<u>41 hours</u>
Total.....	61 hours

ORTHOPAEDICS

[A DIVISION OF SURGERY]

ALLEN FISKE VOSHELL.....	Professor of Orthopaedic Surgery
HARRY L. ROGERS.....	Clinical Professor of Orthopaedic Surgery
MOSES GELLMAN.....	Associate Professor of Orthopaedic Surgery
HENRY F. ULLRICH	Associate Professor of Orthopaedic Surgery
MILTON J. WILDER.....	Assistant Professor in Orthopaedic Surgery
I. H. MASERITZ.....	Associate in Orthopaedic Surgery
JASON H. GASKEL.....	Instructor in Orthopaedic Surgery
ISAAC GUTMAN.....	Instructor in Orthopaedic Surgery
JAMES P. MILLER.....	Instructor in Orthopaedic Surgery
EVERETT D. JONES.....	Assistant in Orthopaedic Surgery
ROBERT C. ABRAMS.....	Assistant in Orthopaedic Surgery

Didactic instruction is given in the second, third and fourth years. Clinical, bedside and outpatient instruction is given at the University, Mercy Hospitals and their Outpatient Departments, Kernan Hospital for Crippled Children, and Baltimore City Hospitals. Brief discussions and demonstrations of physical and occupational therapy are included in the course.

Second year.....	19 hours
Third year.....	36 hours
Fourth year.....	<u>90 hours</u>
Total.....	145 hours

OTOLARYNGOLOGY

[A DIVISION OF SURGERY]

EDWARD A. LOOPER.....	Professor of Otolaryngology and Head of the Department
WAITMAN F. ZINN.....	Professor of Otolaryngology
THOMAS R. O'ROURK.....	Professor of Otolaryngology
FREDERICK T. KYPER.....	Associate Professor of Otolaryngology
BENJAMIN S. RICH.....	Associate Professor of Otolaryngology
FAYNE A. KAYSER.....	Associate Professor of Otolaryngology
W. RAYMOND MCKENZIE.....	Assistant Professor of Otolaryngology
THEODORE A. SCHWARTZ.....	Assistant Professor of Otolaryngology
ROBERT Z. BERRY.....	Associate in Otolaryngology
ARTHUR WARD.....	Associate in Otolaryngology
JOHN H. HIRSCHFELD.....	Assistant in Otolaryngology
BENJAMIN H. ISAACS.....	Associate in Otolaryngology
SAMUEL L. FOX.....	Associate in Otolaryngology
RICHARD J. CROSS.....	Instructor in Otolaryngology
JOHN M. REHBERGER.....	Assistant in Otolaryngology
HARRY P. PORTER.....	Assistant in Otolaryngology
THOMAS D. MICHAEL.....	Assistant in Otolaryngology

Third Year. Instruction to the whole class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and

modern methods of diagnosis. Lectures illustrated by lantern slides are given one hour weekly for eight weeks by Dr. Looper.

Fourth Year. Dispensary instruction is given for three hours daily, to small sections at the University and the Mercy Hospitals. The student is afforded an opportunity to study, diagnose and treat patients under supervision. Ward classes and clinical demonstrations are given in periods of one and one-half hours weekly throughout the session in the University and Mercy Hospitals.

The Looper Clinic for bronchoscopy and esophagoscopy, recently established in the University Hospital, affords unusual opportunities for students to study diseases of the larynx, bronchi and esophagus. The clinic is open to students daily from 2 to 4 P.M. under direction of Dr. Looper, and associates.

The Mercy Hospital clinic for bronchoscopy and esophagoscopy is under the direction of Dr. Zinn. In these two clinics the etiology, symptomatology, diagnosis and treatment of foreign bodies in the air and food passages, as well as bronchoscopy, are taught to students as an aid in the diagnosis and treatment of diseases of the lungs.

Third year.....	9 hours
Fourth year.....	53 hours
Total.....	62 hours

OTOLOGY

[A DIVISION OF SURGERY]

THOMAS R. O'ROURK.....Professor of Otolaryngology

The course in otology is planned to give a practical knowledge of the anatomy and physiology of the ear, and its proximity and relationship to the brain and other vital structures. The inflammatory diseases, their etiology, diagnosis, treatment and complications are particularly stressed, with emphasis upon their relationship to the diseases of children, head-surgery and neurology

Third Year. The whole class is given instruction by means of talks, anatomical specimens and lantern slides. Dr. O'Rourke and associates.

Fourth Year. Small sections of the class receive instruction and make personal examinations of patients under the direction of an instructor. The student is urged to make a routine examination of the ear in his ward work in general medicine and surgery. Dr. O'Rourke and associates.

Third year.....	12 hours
Fourth year.....	40 hours
Total.....	52 hours

PATHOLOGY

HUGH R. SPENCER.....Professor of Pathology and Head of the Department
 ROBERT B. WRIGHT.....Associate Professor of Pathology
 C. GARDNER WARNER.....Associate Professor of Pathology
 WALTER C. MERKEEL.....Associate Professor of Pathology
 DEXTER L. REIMANN.....Associate Professor of Pathology
 JOHN A. WAGNER.....Associate Professor of Pathology
 ALBERT E. GOLDSTEIN.....Assistant Professor of Pathology
 MILTON S. SACKS.....Associate in Pathology

BENEDICT SKITARELIC	Associate in Pathology
CHARLES P. BARNETT.....	Associate in Pathology
CONRAD B. ACTON	Instructor in Pathology
HOWARD B. MAYS	Instructor in Pathology
EPHRAIM T. LISANSKY	Instructor in Pathology
WILLIAM B. VANDEGRIFT	Instructor in Pathology
WILLIAM J. BRYSON	Instructor in Pathology
KARL F. MECH	Instructor in Pathology
SEYMOUR W. RUBIN	Instructor in Pathology
THEODORE KARDASH	Instructor in Pathology
LOUIS C. GAREIS	Instructor in Pathology
ROY B. TURNER.....	Instructor in Pathology
EDWARD L. J. KREIG.....	Instructor in Pathology
JAMES H. RAMSEY.....	Instructor in Pathology
JAMES R. KARNS.....	Instructor in Pathology
RAYMOND M. CUNNINGHAM	Instructor in Pathology
HARRY COHEN.....	Assistant in Pathology
GERARDO B. POLANCO.....	National Cancer Institute Trainee

Courses of instruction in pathology are given during the second and third years. The courses are based on the previous study of normal structure and function and aim to outline the history of disease. The relationship between clinical symptoms and anatomical lesions is constantly stressed.

GENERAL PATHOLOGY. *Second Semester, Second Year.* This course includes the study of disturbances of the body fluids; disturbances of structure, nutrition and metabolism of cells; disturbances of fat, carbohydrate and protein metabolism; disturbances of pigment metabolism; inflammation and tumors.

Laboratory instruction is based on the study of prepared slides (loan collection) and corresponding gross material.

APPLIED PATHOLOGY, INCLUDING GROSS MORBID ANATOMY AND MORBID PHYSIOLOGY. *Third Year.* The laboratory instruction in this course is carried out in small teaching museums where prepared specimens and material from autopsies with clinical histories and sections are available for study. For this work the class is divided into small groups. Clinical correlation is stressed.

AUTOPSIES. *Third Year.* Students in small groups attend autopsies at the morgues of the University Hospital and the Baltimore City Hospitals.

CLINICAL-PATHOLOGICAL CONFERENCE. (*Fourth Year.*) These exercises are held in collaboration with the various clinical departments. Selected cases are discussed and autopsy findings are presented.

Second year.....	184 hours
Third year.....	160 hours
Fourth year.....	30 hours
Total.....	374 hours

PEDIATRICS

J. EDMUND BRADLEY.....	Professor of Pediatrics and Head of the Department
C. LORING JOSLIN.....	Professor of Pediatrics
A. H. FINKELSTEIN.....	Associate Professor of Pediatrics

FREDERICK B. SMITH.....	Associate Professor of Pediatrics
GORDON E. GIBBS.....	Associate Professor Clinical Pediatric Research
ALBERT JAFFE.....	Associate Clinical Professor of Pediatrics
SAMUEL S. GLICK.....	Assistant Professor of Pediatrics
JEROME FINEMAN.....	Assistant Professor of Pediatrics
GIBSON J. WELLS.....	Assistant Professor of Pediatrics
WILLIAM M. SEABOLD.....	Assistant Professor of Pediatrics
ANNIE M. BESTEBREURTJE.....	Assistant Professor of Pediatrics
CLEWELL HOWELL.....	Associate in Pediatrics
G. BOWERS MANSDORFER.....	Associate in Pediatrics
SIDNEY SCHERLIS.....	Associate in Pediatrics
MELCHIJAH SPRAGINS.....	Associate in Pediatrics
ARNOLD F. LAVENSTEIN.....	Instructor in Pediatrics
MARY L. HAYLECK.....	Instructor in Pediatrics
ISRAEL P. MERANSKI.....	Instructor in Pediatrics
THOMAS A. CHRISTENSEN.....	Instructor in Pediatrics
JOSEPH M. CORDI.....	Instructor in Pediatrics
LEONARD SCHERLIS.....	Instructor in Pediatrics
LESTER H. CAPLAN.....	Instructor in Pediatrics
RUTH BALDWIN.....	Instructor in Pediatrics
EDWARD G. FIELD.....	Instructor in Pediatrics
MELVIN M. BORDEN.....	Instructor in Pediatrics
HOWARD GOODMAN.....	Instructor in Pediatrics
WILLIAM EARL WEEKS.....	Assistant in Pediatrics
J. CARLTON WICH.....	Assistant in Pediatrics
O. WALTER SPURRIER.....	Assistant in Pediatrics
A. MAYNARD BACON, JR. ⁶	Assistant in Pediatrics
GARRETT E. DEANE.....	Assistant in Pediatrics
FREDERICK J. HELDRICH, JR.....	Assistant in Pediatrics
MARTIN K. GORTEN.....	Assistant in Pediatrics
ARNOLD TRAMER.....	Assistant in Pediatrics
KENNETH F. CLUTE.....	P.H.S. and M & R Fund Research Associate in Pediatrics
ANNE M. LASTER.....	Bressler Reserve Fund Research Assistant in Pediatrics
ALBERT L. TRUCKER.....	Bressler Reserve Fund Research Assistant in Pediatrics

Third Year. The course is presented as follows:

Lectures on infant feeding and the fundamentals of diseases of infants and children. (15 hours.)

Lectures on contagious diseases in conjunction with the Department of Hygiene and Preventive Medicine. (14 hours.)

A special course in physical diagnosis is given at City Hospitals. (20 hours.)

Clinical conferences demonstrating diseases of the new-born. (6 hours.)

Fourth Year. A clinic in the amphitheatre is given at which time patients are shown demonstrating the features of the diseases discussed. (30 hours.)

Conferences and demonstrations are given in problems of diagnosis, care, treatment and clinical pathology of diseases of infants and children. (30 hours.)

Students are assigned subjects on which to prepare theses.

Clinical clerkships are assigned on the pediatric wards, where experience is gained in taking histories, making physical examinations, doing routine laboratory

work, and following up patients' progress. This is under the supervision of the visiting staff. (140 hours.)

Instruction is given in the pediatric clinic of the out-patient department of the University Hospital. This consists of 1½ hours daily for five weeks—30 minutes each day is devoted to a clinical demonstration of some interesting case by a member of the staff; one hour daily to taking histories and making physical examinations under the supervision of an instructor. (45 hours.)

Total hours: 300.

PHARMACOLOGY

JOHN C. KRANTZ, JR.....	Professor of Pharmacology and Head of the Department
C. JELLEFF CARR	Professor of Pharmacology
RAYMOND M. BURGISON.....	Assistant Professor of Pharmacology
RUTH MUSSER.....	Instructor in Pharmacology
JOSEPH G. BIRD	Assistant in Pharmacology
AMEDEO S. MARRAZZI.....	Lecturer in Pharmacology
WILLIAM G. HARNE.....	Demonstrator in Pharmacology
FREDERICK K. BELL.....	Fellow in Pharmacology
MARY S. FASSEL.....	Emerson Fellow in Pharmacology
JOHN B. HARMON.....	Emerson Fellow in Pharmacology
GO LU.....	Fellow in Pharmacology
LEONARD S. BRAHEN.....	Fellow in Pharmacology
JOHNSON S. L. LING.....	Eli Lilly Fellow in Pharmacology
MARY FRANCES BYRD.....	Fellow in Pharmacology

This course is designed to include those phases of pharmacology necessary for an intelligent use of drugs in the treatment of disease. The didactic instruction includes materia medica, pharmacy, prescription-writing, toxicology, posology, pharmacodynamics, and experimental therapeutics. The laboratory exercises parallel the course of lectures.

In addition, optional conference periods and lectures are available for students desiring further instruction or advice.

Total hours: 216.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

PHYSICAL DIAGNOSIS [A DIVISION OF MEDICINE]

T. CONRAD WOLFF

Associate Professor of Medicine, and Head of the Division of Physical Diagnosis	
ROBERT A. REITER.....	Assistant Professor of Medicine
SAMUEL LEGUM.....	Associate in Medicine
EDMUND G. BEACHAM.....	Associate in Medicine
DANIEL WILFSON.....	Associate in Medicine
LEON ASHMAN.....	Associate in Medicine
JOHN B. DEHOFF.....	Associate in Medicine
WILLIAM G. HELFRICH.....	Instructor in Medicine
LEON A. KOCHMAN.....	Instructor in Medicine
STUART D. SUNDAY.....	Instructor in Medicine
ELIZABETH D. SHERRILL.....	Instructor in Medicine

STEPHEN J. VAN LILL, III.....	Instructor in Medicine
BERNARD BURGIN.....	Instructor in Medicine
FRANKLIN LESLIE.....	Instructor in Medicine
LAURISTON KEOWN.....	Instructor in Medicine
CARL F. MYERS.....	Assistant in Medicine
JOSEPH C. MATCHAR.....	Assistant in Medicine

The course in physical diagnosis starts with the first semester of the Sophomore year and ends with the termination of the second semester of the Junior year.

First Semester—Second Year—Lecture, one hour weekly covering the technique of history writing and the mechanics of the physical signs elicited in the normal person through inspection, palpation, percussion and auscultation.

Second Semester—Second Year—Lecture, one hour weekly, covering the technique of history writing in cases involving disease, and the mechanics of pathological physical signs on inspection, palpation, percussion and auscultation.

In the third and fourth quarters small tutorial groups are formed, each under the direction of an instructor. Experience in physical examination of normal individuals is given in the third quarter for one afternoon weekly. In the fourth quarter the students become acquainted with abnormal signs through examination of hospital patients.

Third Year—a. The class is divided into four sections. Each section receives bedside instruction in physical diagnosis for seven weeks (2 hrs. daily). For this purpose small groups under an instructor are formed. The instruction is carried on in the Baltimore City Hospitals but in addition advantage is occasionally taken of the clinical opportunities in other institutions.

b. Lecture course (1 hr. weekly for 15 weeks) covering the mechanisms of abnormal signs.

PHYSIOLOGY

WILLIAM R. AMBERSON.....	Professor of Physiology and Head of the Department
DIETRICH C. SMITH.....	Professor of Physiology
FREDERICK P. FERGUSON.....	Associate Professor of Physiology
JOHN I. WHITE.....	Assistant Professor of Physiology
J. HENRY WILLS.....	Lecturer in Physiology
SAMUEL L. FOX.....	Instructor in Physiology
SYLVIA HIMMELFARB.....	Instructor in Physiology
JEANNE ANN BARRY.....	Junior Instructor in Physiology
ALFRED JOSEPH PRATT.....	John F. B. Weaver Fellow in Physiology
CAROLYN F. HENDRICKSON.....	Research Assistant in Physiology

The course in physiology is given in two parts:

First Year. Second Semester. Neuro-muscular physiology is presented in two lectures a week, without laboratory work.

Second Year. First Semester. The remainder of the subject is presented in four lectures, one conference, and two laboratory periods a week.

The fundamental concepts of physiology are presented with special reference to mammalian problems.

Total hours: 224.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

PLASTIC SURGERY [A DIVISION OF SURGERY]

EDWARD A. KITLOWSKI.....Clinical Professor of Plastic Surgery
CLARENCE P. SCARBOROUGH.....Instructor in Plastic Surgery
JOHN J. ANGELO.....Assistant in Plastic Surgery

This course is designed to acquaint students with the problems of reconstructive and plastic surgery. A subdivision in the dispensary has been established and beds for patients will be available for instruction in this course at the University and Baltimore City Hospitals and Kernan's Hospital for Crippled Children.

Third Year. Five lectures are given to the whole class. Dispensary instruction is provided on Mondays and Fridays.

Fourth Year. Ward rounds and operative demonstrations are held at the hospitals.

PROCTOLOGY [A DIVISION OF SURGERY]

MONTE EDWARDS.....Professor of Proctology
THURSTON R. ADAMS.....Assistant Professor of Proctology
SIMON H. BRAGER.....Assistant Professor of Proctology
DONALD B. HEBB.....Instructor in Proctology
WILLIAM T. SUPIK.....Instructor in Proctology
RAYMOND M. CUNNINGHAM.....Instructor in Proctology
JOHN D. ROSEN.....Instructor in Proctology

Third Year. Seven lectures are given to the whole class. The course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and covers the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Monte Edwards.

Fourth Year. Ward and dispensary instruction is given in the University and Mercy Hospitals, where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope in the examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Drs. Supik and Brager. University Hospital—Drs. Monte Edwards, Adams, Cunningham and Rosen.

Third year.....	7 hours
Fourth year.....	16 hours
Total.....	23 hours

PSYCHIATRY

JACOB E. FINESINGER.....Professor of Psychiatry and Head of the Department
JOHN R. REID.....Visiting Professor of Psychiatry
H. WHITMAN NEWELL.....Associate Professor of Psychiatry
HARRY M. MURDOCK.....Assistant Professor of Psychiatry
PHILIP S. WAGNER.....Assistant Professor of Psychiatry
HANS W. LOEWALD.....Assistant Professor of Psychiatry
WILLIAM W. ELGIN.....Assistant Professor of Psychiatry

J. G. N. CUSHING.....	Assistant Professor of Psychiatry
KATHRYN L. SCHULTZ.....	Assistant Professor of Psychiatry
ROBERT G. GRENELL.....	Assistant Professor of Psychiatric Research
ISADORE TUERK.....	Associate in Psychiatry
EPHRAIM T. LISANSKY.....	Associate in Psychiatry
KATHRYN DICE.....	Associate in Clinical Psychology
ELIZABETH LAFORGE.....	Associate in Psychiatric Social Work
A. RUSSELL ANDERSON.....	Instructor in Psychiatry
KLAUS W. BERBLINGER.....	Instructor in Psychiatry
ENOCH CALLAWAY, JR.....	Instructor in Psychiatry
WILLIAM N. FITZPATRICK.....	Instructor in Psychiatry
MARION W. MATHEWS.....	Instructor in Psychiatry
FRANCIS J. McLAUGHLIN.....	Instructor in Psychiatry
SAMUEL NOVEY.....	Instructor in Psychiatry
VIRGINIA SUTTENFIELD.....	Instructor in Psychiatry
FERN E. MACALLISTER.....	Assistant in Psychiatry
MARJORIE R. FLEITZER.....	Assistant in Psychiatric Social Work
HERMIONE HUNT HAWKINS.....	Assistant in Clinical Psychology
VESTA MAY STEVENS.....	Assistant in Psychiatric Social Work
MARCELLA WEISMAN.....	Assistant in Psychiatric Social Work
JOHN W. POWELL.....	Army Chemical Center and Bressler Reserve Fund Research Associate in Psychiatry
NANCY V. REID.....	Bressler Reserve Fund Research Associate in Psychiatry
BETTY JANE FAX.....	Research Associate in Psychiatry
MORITZ MICHAELIS.....	Research Associate in Psychiatry
RUTH PAGE EDWARDS.....	Fellow in Psychiatry
MARVIN JAFFE.....	Fellow in Psychiatry
ARTHUR H. SCHMALE, JR.....	National Institute of Mental Health Fellow in Psychiatry
JEANNETTE F. RAYNER.....	Research Assistant in Psychiatry
EDWIN L. POOLE.....	Research Assistant in Psychiatry
FLORIS DE BALBIAN VERSTER.....	Research Assistant in Psychiatry
ELIZABETH A. ADAMS.....	Bressler Reserve Fund Research Assistant in Psychiatry

First Year. Fourteen two-hour periods during the second semester are devoted to a consideration of human relations as applied to the practice of medicine. The topics dealt with include personality development, reactions to stress, and situational and social factors in disease. The emphasis is upon observing, understanding and evaluating the personal and social factors in the disease process, in treatment and prevention. Consideration is given to problems of values and scientific methodology as they apply to the work of the physician. Patients with common medical and surgical complaints are interviewed to illustrate methods of interviewing and developing a useful therapeutic relationship. The course is conducted by means of group discussion, supplemented by reading.

Second Year. Fourteen two-hour periods are spent in the first semester in discussions and lectures. The emphasis is on methods of examining patients, and methods of developing and utilizing the doctor-patient relationship. The discussions center about psychopathology, as it operates in disease and in the treatment process. An attempt is made to relate emotional disturbances to what is known in neurophysiology, endocrinology, psychology and sociology. Patients

are interviewed and examined to illustrate the general principles and the specific procedures used in the examination of patients. The group discussions are supplemented by suggested reading.

Third Year. Sixteen lecture hours are devoted to further considerations of special psychopathology and the principles of psychotherapy. Specialized forms of treatment are reviewed, but the main emphasis is toward familiarizing the student with forms of therapy feasible in routine medical practice. During 36 clinic hours the student will be supervised in history-taking, mental status and psychometric examination, and follow-up studies of patients.

Fourth Year. A clinical clerkship is offered in the wards of the University Hospital for one month. Patients are assigned for treatment under supervision. Emphasis is placed on diagnosis, methods of interviewing, methods of developing and managing a therapeutic doctor-patient relationship, and carrying out psychotherapy. This is supplemented by seminar meetings for discussion of child psychiatry, psychotherapy, clinical psychology and social service. Topics are assigned from the current literature for group discussion. Four afternoons are spent in the wards of the Spring Grove State Mental Hospital in examining patients with emphasis in the diagnosis, treatment and management of the psychoses. Eight clinics are held for the entire fourth-year class.

ROENTGENOLOGY

WALTER L. KILBY.....	Professor of Roentgenology, and Head of the Department
CHARLES N. DAVIDSON.....	Associate Professor of Roentgenology
JOHN DECARLO, JR.....	Assistant Professor of Roentgenology
DONALD J. BARNETT.....	Assistant Professor of Roentgenology
EDWARD R. DANA.....	Associate in Roentgenology
JOHN M. DENNIS.....	Associate in Radiology
JOHN T. BRACKIN.....	Instructor in Roentgenology
HERBERT B. COPELAND.....	Instructor in Roentgenology
ROBERT W. SWAIN.....	Consultant in Radiologic Physics, Cancer Teaching Program

During the academic year, small groups of the third and fourth year classes are given weekly instruction in the diagnostic and therapeutic uses of the Roentgen rays. An effort is made to familiarize the student with the indications for and the limitations of the Roentgen ray examinations. The history, physics and practical therapeutic application of Roentgen rays are given stressing the use of radiation as a weapon now available in a variety of disorders of the human body ranging from simple inflammations to malignant neoplastic conditions. Conferences are held with the various departments during the school year which are also open to members of the fourth year class.

Third year.....	8 hours
Fourth year.....	24 hours
Total	32 hours

SPEECH TRAINING CLINIC [A DIVISION OF SURGERY]

EDWARD A. KITLOWSKI.....	Clinical Professor of Plastic Surgery
RAY EHRENSBERGER.....	Professor of Speech
MERLE ANSBERRY.....	Associate Professor of Speech

This department has been installed in conjunction with the Department of Speech of the University at College Park to evaluate the speech difficulties in children with congenital defects. Admission to the Clinic is by appointment only. The Clinic operates all day Thursdays.

SURGERY

CHARLES REID EDWARDS.....	Professor of Surgery, and Acting Head of the Department
WALTER D. WISE.....	Professor of Surgery
ELLIOTT H. HUTCHINS.....	Professor of Surgery
D. J. PESSAGNO.....	Professor of Clinical Surgery
F. L. JENNINGS.....	Professor of Clinical Surgery
GEORGE H. YEAGER.....	Professor of Clinical Surgery
MONTÉ EDWARDS.....	Clinical Professor of Surgery
OTTO C. BRANTIGAN.....	Professor of Clinical Surgery
HARRY C. HULL.....	Professor of Clinical Surgery
JAMES W. NELSON.....	Professor of Clinical Surgery
R. RIDGEWAY TRIMBLE.....	Professor of Clinical Surgery
CHARLES A. REIFSCHNEIDER.....	Clinical Professor of Traumatic Surgery
THOMAS R. CHAMBERS.....	Associate Professor of Surgery
R. W. LOCHER.....	Associate Professor of Clinical Surgery
EDWARD S. JOHNSON.....	Associate Professor of Surgery
CYRUS F. HORINE.....	Associate Professor of Surgery
CHARLES W. MAXSON.....	Associate Professor of Surgery
C. W. PEAKE.....	Associate Professor of Surgery
WILLIAM F. REINHOFF, JR.....	Associate Professor of Surgery
W. WALLACE WALKER.....	Associate Professor of Surgery and Surgical Anatomy
H. F. BONGARDT.....	Assistant Professor of Surgery
I. O. RIDGELY.....	Assistant Professor of Surgery
ARTHUR G. SIWINSKI.....	Assistant Professor of Surgery
SIMON H. BRAGER.....	Assistant Professor of Surgery and Proctology
THURSTON R. ADAMS.....	Assistant Professor of Surgery
RAYMOND F. HELFRICH.....	Associate in Surgery
WILLIAM B. SETTLE.....	Associate in Surgery
GEORGE GOVATOS.....	Associate in Surgery
JOSEPH V. JERARDI.....	Associate in Surgery
HERBERT E. REIFSCHNEIDER.....	Associate in Surgery
HAROLD H. BURNS.....	Associate in Surgery
WILLIAM L. GARLICK.....	Associate in Surgery
HARRY C. BOWIE.....	Associate in Surgery
EDWIN H. STEWART, JR.....	Associate in Surgery
JOSEPH M. MILLER.....	Lecturer in Surgery
J. DUER MOORES.....	Instructor in Surgery
CALVIN HYMAN.....	Instructor in Surgery
CLYDE F. KARNS.....	Instructor in Surgery
DANIEL R. ROBINSON.....	Instructor in Surgery
GEORGE H. BROUILLET.....	Instructor in Surgery
JOHN F. SCHAEFER.....	Instructor in Surgery
ROBERT F. HEALY.....	Instructor in Surgery
ROBERT C. SHEPPARD.....	Instructor in Surgery
SAMUEL E. PROCTOR.....	Instructor in Surgery

F. FORD LOKER.....	Instructor in Surgery
E. RODERICK SHIPLEY.....	Instructor in Surgery
PATRICK C. PHELAN, JR.....	Instructor in Surgery
LOUIS E. GOODMAN.....	Instructor in Surgery
HAROLD L. ZUPNIK.....	Instructor in Surgery
MICHAEL L. DEVINCENTES.....	Instructor in Surgery
R. ADAM COWLEY.....	

Assistant in Thoracic Surgery; Assistant Director Experimental Surgery

WILLIAM R. GERAGHTY.....	Assistant in Surgery
HOWARD B. McELWAIN.....	Assistant in Surgery
A. V. BUCHNESS.....	Assistant in Surgery
T. J. TOUHEY.....	Assistant in Surgery
SAMUEL H. CULVER.....	Assistant in Surgery
L. T. CHANCE.....	Assistant in Surgery
W. ALLEN DECKERT.....	Assistant in Surgery
WILLIAM C. DUNNIGAN.....	Assistant in Surgery
RAYMOND M. CUNNINGHAM.....	Assistant in Surgery
JOHN W. CHAMBERS.....	Assistant in Surgery
ROSS Z. PIERPONT.....	Assistant in Surgery
JAMES N. CIANOS.....	Assistant in Surgery
RICHARD M. GARRETT.....	Assistant in Surgery
WILLIAM D. LYNN.....	Assistant in Surgery
DAVID R. WILL.....	Assistant in Surgery
HAROLD P. BIEHL.....	Assistant in Surgery
KIRK MOORE.....	Assistant in Surgery

Instruction is given by means of lectures, laboratory work, recitations, dispensary work, bedside instruction, ward classes, and clinics. The work begins in the second year and continues throughout the third and fourth years.

The teaching is done in the anatomical laboratory, operative surgery laboratory, the dispensaries, wards, laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and operating rooms of the Baltimore City Hospitals.

SECOND YEAR

TOPOGRAPHIC AND SURGICAL ANATOMY. *Second semester.* The course is designed to bridge the gap between anatomy in the abstract and clinical anatomy applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory. Students are required to dissect and to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected to bring out outlines and relations of structures.

Two lectures and two laboratory periods per week. Drs. Brantigan, Walker, Settle, Bowie, H. E. Reifschneider, Pierpont and Garrett.

Total hours: 96.

PRINCIPLES OF SURGERY. *Second semester.* The course includes discussions of irritants, infection, repair of tissue, healing of tissue, relationship of bacteriology to surgery, modern chemotherapy in surgical diseases, ulcers, wounds, thrombophlebitis, phlebothrombosis, peripheral vascular diseases, thermal burns, injuries due to cold, surgical shock, diseases of the lymphatics, gangrene of the skin and

extremities, aneurysms, hemorrhage, varicose veins, embolism, sinuses and fistulae, tetanus, anthrax and actinomycosis.

Lectures, two hours a week for one semester, are given to the whole class. Drs. Adams and Sheppard.

THIRD YEAR

GENERAL AND REGIONAL SURGERY. Lectures, recitations and clinics are given on the principles of surgery and general surgery including fractures and dislocations. Three hours a week to the whole class. Dr. Hull.

The class is divided into groups. Instruction in history-taking and surgical pathology is given under the supervision of the chief of the pathology department of the Baltimore City Hospitals. Instruction is also given in surgical diagnosis and in general surgery at the bedside and in the classroom at B.C.H. by Drs. Bowie, Koontz, Brantigan and Adams. Two hours per week are given in orthopaedic surgery by Dr. Voshell, chief of the orthopaedic service of this institution.

OPERATIVE SURGERY. Lectures and operative demonstrations are given under the supervision of Dr. Yeager assisted by Dr. Govatos. The class is divided into sections and each section is given practical and individual work under the supervision of instructors.

SURGICAL OUT-PATIENT DEPARTMENT. Under supervision, the student takes the history, makes the physical examination, attempts the diagnosis and, as far as possible, carries out the treatment of ambulatory surgical patients in the University and Mercy Hospitals. Mercy Hospital—Dr. Raymond F. Helfrich assisted by the out-patient staff. University Hospital—Drs. Settle and Sheppard assisted by the out-patient staff.

FOURTH YEAR

CLINICS. Surgical pathological Conference. A weekly conference is conducted at the University Hospital for the entire class. Daily ward classes at University and Mercy Hospitals, and half day ward work under the supervision of Dr. E. R. Shipley at University and Dr. F. Ford Loker, Mercy Hospital.

SURGERY OF THE CHEST:—Mercy Hospital. Operations and conferences. 14 hours. Drs. Rienhoff and Garlick.

TRAUMATIC SURGERY. This course deals with operative and post-operative treatment of accident cases and with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. C. A. Reifschneider.

CLINICAL CLERKSHIP. This work includes the personal study of assigned hospital patients under supervision of the staffs of the University and Mercy Hospitals, and embraces history-taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

WARD CLASSES. Ward-class instruction in small groups will consist of ward rounds, surgical diagnosis, treatment and the after-care of operative cases. Mercy Hospital—Drs. Wise, Hutchins, Pessagno, Nelson, Trimble, Brager, Jerardi, Gar-

lick and Loker. University Hospital—Drs. C. Reid Edwards, Yeager, Hull and C. A. Reifschneider.

THORACIC SURGERY [A DIVISION OF SURGERY]

OTTO C. BRANTIGAN.....	Professor of Thoracic Surgery
WILLIAM L. GARLICK.....	Associate Professor of Thoracic Surgery
R. ADAMS COWLEY.....	Assistant in Thoracic Surgery
DONALD B. HEBB.....	Assistant in Thoracic Surgery
FRANK FARAINO.....	Resident in Thoracic Surgery
CALVIN Y. HADIDIAN.....	Hitchcock Fellow in Thoracic Surgery

Men having completed three years of American Board of Surgery training are eligible for appointment. The first year is spent in thoracic research surgery. The second year is in clinical thoracic surgery at Baltimore City, Mercy and University Hospitals.

TROPICAL MEDICINE [A DIVISION OF MEDICINE]

Certain phases of tropical medicine are considered in the course on clinical pathology. In addition, a course of lectures and demonstrations is given to the entire fourth year class.

TUBERCULOSIS [A DIVISION OF MEDICINE]

During the third year in connection with the instruction in physical diagnosis a practical course is given at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

UROLOGY [A DIVISION OF SURGERY]

W. HOUSTON TOULSON.....	Professor of Urology
KENNETH D. LEGGE.....	Professor of Clinical Urology
HOWARD B. MAYS.....	Assistant Professor of Urology
FRANCIS W. GILLIS.....	Assistant Professor of Urology
JOHN F. HOGAN.....	Assistant Professor of Urology
AUSTIN H. WOOD.....	Associate in Urology
LYLE J. MILLAN.....	Associate in Urology
L. K. FARGO.....	Associate in Urology
HUGH J. JEWETT.....	Associate in Urology
JOHN S. HAINES.....	Associate in Urology
MARTIN A. ROBBINS.....	Associate in Urology
JOHN D. YOUNG, JR.....	Associate in Urology

Third Year. This course is given for seven hours to the whole class. It consists of lectures and demonstrations, including the use of lantern slides and motion pictures. Dr. Toulson.

Fourth Year. The course includes explanations and demonstrations of urethroscopy, cystoscopy, ureteral catheterization, renal function tests, urography, urine cultures and the various laboratory procedures. The teaching consists of clinics and ward rounds to small groups, and attendance by members of the senior class upon the out-patients in the dispensary. The student is placed on his own re-

sponsibility in arriving at a diagnosis. These dispensary classes are conducted at both the Mercy and University Hospitals where practically every variety of urogenital disease is seen and used for teaching purposes.

Third year	6 hours
Fourth year	39 hours
Total	45 hours

MEDICAL LIBRARY

HOWARD ROVELSTAD, A.B., M.A., B.S.L.S. *Director of Libraries and Professor
of Library Science*

IDA MARIAN ROBINSON, A.B., B.S.L.S. *Librarian and Associate Professor of
Library Science*

HILDA E. MOORE, A.B., A.B.L.S. *Associate Librarian*

FLORENCE R. KIRK *Assistant Librarian*

MARIE HARVIN, B.A., B.S.L.S. *Cataloguer*

FRITZL J. FARLEY. *Library Assistant*

LORRAINE BATYI. *Assistant to Cataloguer*

POSTGRADUATE COURSES

COMMITTEE ON POSTGRADUATE STUDIES

HOWARD M. BUBERT, *Chairman and Director*DIETRICH C. SMITH, *Assistant Director and 1st Vice-chairman*L. A. M. KRAUSE, *2nd Vice-chairman*MILTON S. SACKS, *Secretary*

J. Edmund Bradley

OTTO C. BRANTIGAN

GEORGE H. BUCK

FRANK H. J. FIGGE

WILLIAM K. DIEHL

WETHERBEE FORT

JOHN C. KRANTZ, JR.

J. MORRIS REESE

ALLEN F. VOSHELL

JOHN A. WAGNER

ELIZABETH CARROLL, *Executive Secretary*The Dean—*Ex Officio*

Calendar: Postgraduate courses are offered from September 18 to June 6th.

During the past year the Post Graduate Committee gave a day-long seminar and luncheon at the University Hospital for the Maryland Academy of General Practice. Fifty-one physicians attended.

A weekly television program has been inaugurated. The content is planned to interest and instruct the general public.

Extramural courses for County Medical Societies will be resumed in the fall. Interested Societies are requested to make their inquiries early.

A joint program designed to assist the Provident Hospital in the training of its house staffs is being considered by the Johns Hopkins University and the University of Maryland Schools of Medicine.

The following intramural postgraduate courses have been continued.

GENERAL ANATOMY: The course is designed to prepare candidates for the examination of the American Board of General Surgery and Surgical Specialties. There is no strict rule governing either the content or duration of the course. Students may dissect a complete cadaver or any particular region in which they may be interested. Tuition arranged according to course content and duration.

ANATOMY OF HEAD AND NECK as applied to the eye, ear, nose and throat. Duration 150 hours, beginning on October 1 and ending approximately February 28, comprising two periods of 4 hours per week. Tuition \$75.00. Details as to the time of the individual periods will be arranged with candidates who wish to take the course.

SURGICAL ANATOMY: The course is designed to prepare candidates for the examination in Anatomy of the American Board of Surgery. This is a ninety-hour course (3 hours a day, 2 days a week) given in conjunction with the regular sophomore medical course in surgical anatomy. Tuition \$150.00.

PATHOLOGY: This course is designed to prepare candidates for certification in surgery, surgical specialties and internal medicine. Individuals will receive training in autopsy and surgical pathology. Minimum duration is full time, six months. Tuition \$150.00.

NEURO-PATHOLOGY: This course is designed to aid in meeting the requirements of the specialty boards in neurological sciences and covers basic studies in diseases of the central nervous system. Duration is six months, full time. Tuition \$200.00 plus \$10.00 laboratory fee.

GYNECOLOGY AND OBSTETRICS: This is a review for general practitioners. Students attend lectures, ward rounds and clinics, and observe operations and deliveries. Full time for twelve weeks. Tuition \$150.00.

GYNECOLOGY, ONCOLOGY AND FEMALE UROLOGY: This is a review designed primarily for the general practitioner. Students attend lectures, ward rounds and clinics and observe operations. Full time for ten weeks. Tuition \$125.00.

BASIC SCIENCES AS THEY APPLY TO THE PRACTICE OF MEDICINE. This course is designed to familiarize students with the advances in basic sciences during recent years. The course consists of 32 periods of 2 hours each, once a week between October and June. Tuition \$50.00.

Full descriptions of these courses are available. Inquiries should be addressed to the Post Graduate Committee, University of Maryland School of Medicine, Baltimore 1, Maryland.

LECTURERS IN POSTGRADUATE MEDICINE

Thurston R. Adams	Richard M. Garrett	Herbert E. Reifschneider
Marie A. Andersch	Albert E. Goldstein	Dexter L. Reimann
James G. Arnold, Jr.	Lewis P. Gundry	Henry L. Rigdon
Robert E. Bauer	Frank W. Hachtel	Harry M. Robinson, Jr
Joseph G. Bird	Jerome Hartz	Harry M. Robinson, Sr.
Harry C. Bowie	Charles W. Hawkins	Raymond C. V. Robinson
J. Edmund Bradley	Nathan B. Herman	Milton S. Sacks
Otto C. Brantigan	Harry C. Hull	John E. Savage
George H. Brouillet	J. Mason Hundley, Jr.	Sidney Scherlis
Howard M. Bubert	D. Frank Kaltreider	Emil G. Schmidt
T. Nelson Carey	Theodore Kardash	William B. Settle
C. Jelleff Carr	F. Edwin Knowles, Jr.	Dietrich C. Smith
Robert Chenowith	Vernon E. Krah	George W. Smith
Ernest I. Cornbrooks, Jr.	John C. Krantz, Jr.	Nathan Snyder
Edward F. Cotter	L. A. M. Krause	Hugh R. Spencer
Richard J. Cross, Jr.	Arnold F. Lavenstein	Melchijah Spragins
Francis G. Dickey	C. Edward Leach	Edwin H. Stewart, Jr.
William K. Diehl	Ephraim T. Lisansky	Harry A. Teitelbaum
Everett S. Diggs	William S. Love, Jr.	W. Houston Toulson
D. McClelland Dixon	Wm. V. Lovitt, Jr.	Eduard Uhlenhuth
Louis H. Douglass	Fred R. McCrumb	Henry F. Ullrich
J. Sheldon Eastland	Hugh B. McNally	Allen Fiske Voshell
Charles Reid Edwards	Howard B. Mays	John A. Wagner
Monte Edwards	Samuel Morrison	Wallace Walker
William L. Fearing	H. Whitman Newell	Milton J. Wilder
Frederick P. Ferguson	Frank J. Otenasek	Walter D. Wise
Frank H. J. Figge	Robert T. Parker	Henry L. Wollenweber
Jacob E. Finesinger	Ross Z. Pierpont	Theodore E. Woodward
A. H. Finkelstein	Maurice C. Pincoffs	Robert B. Wright
Russel S. Fisher	J. Morris Reese	George H. Yeager

FIRST YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 18, 1952 TO JANUARY 24, 1953

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	*Histology and Embryology Lecture and Lab. <i>2nd Floor Bressler</i>		Orientation 9:00-10:00 1st 3 Lectures <i>A. H.</i> Anatomy 10:00-12:00 1st 3 Sessions After Oct. 8 Anatomy 9:00-12:00 <i>1st Floor Br. Lab.</i>	*Histology and Embryology Lecture and Lab. <i>2nd Floor Bressler</i>		Gross Anatomy <i>A. H.</i>
12.00 to 1.00			Lunch			
1.00 to 5.00			Gross Anatomy Lecture <i>A. H.</i> 1:00 to 2:00 Daily. Laboratory Bressler 1, 2:00 to 5:00 Daily			

* Course ends December 20, 1952.

SECOND SEMESTER, JANUARY 28 TO JUNE 7, 1952

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	Laboratory — Biol. Chem. Sect. A — Psychiatry Sect. B A.H.	Laboratory — Biol. Chem. Sect. B — Psychiatry Sect. A A.H.	Laboratory — Biol. Chem. Sect. A — Psychiatry Sect. B A.H.	Laboratory — Biol. Chem. Sect. B — Psychiatry Sect. A A.H.		
12.00 to 1.00	Lunch	Lunch	Lunch	Lunch	Lunch	
1.00 to 2.00	Biol. Chem. <i>Adm. 1</i>	Biol. Chem. <i>Adm. 1</i>	Biol. Chem. <i>Adm. 1</i>	Biol. Chem. <i>Adm. 1</i>	Biol. Chem. <i>Adm. 1</i>	
2.00 to 3.00	Psychiatry 2-4 Amp. <i>Univ. Hosp.</i>	Neuro- Anatomy Lecture and Laboratory <i>Bressler 2nd Floor</i>	Biol. Chem. Conference <i>Adm. 1</i>	Neuro- Anatomy Lecture and Laboratory <i>Bressler 2nd Floor</i>	Biol. Chem. Conference <i>Adm. 1</i>	
3.00 to 5.00	Neuro- Physiology 4-5 <i>Bressler 2</i>		Biostatistics 3-4 <i>Adm. 1</i>		Neuro- Physiology <i>Bressler 2 (3-4)</i>	

Locations of Lecture Halls and Laboratories:

Adm. 1—First Floor, Administration Building, 520 W. Lombard Street.
A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, 522 W. Lombard Street.
Biological Chemistry Laboratory—Third Floor, 31 South Greene Street.
Bressler Research Laboratory—29 S. Greene Street.
Gross Anatomy—First Floor.
Histology and Embryology—Second Floor.
Neuro-anatomy—Second Floor.

Mid-Year Examinations—January 19-24, 1953

Final Examinations—Begin May 24, 1953

SECOND YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 18, 1952 TO JANUARY 24, 1953

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Physiology <i>Bressler 2</i>	Physiology <i>Bressler 2</i>	Medicine <i>Bressler 2</i>	Physiology <i>Bressler 2</i>	Physiology <i>Bressler 2</i>	
9.30 to 10.30	Physiology Conference <i>Bressler 2</i>	Bacteriology <i>Adm. 1</i>	Bacteriology <i>Adm. 1</i>	Pharmacology <i>Bressler 2</i>	Pharmacology <i>Bressler 2</i>	-
10.30 to 12.30	†Bacteriology Laboratory				Neurological Diagnosis 10:45-11:45 <i>C. H.</i>	
12.30	Lunch					
1.00 to 5.00	Pharmacology Lecture <i>Bressler 2</i> <i>Sect. B.</i> <i>Sect. A.</i> 1:00-2:00		Psychiatry 1:30-3:30 <i>C. H.</i>	Pharmacology Laboratory 3rd Floor <i>Bressler</i> <i>Sect. B.</i> <i>Sect. A.</i> 1:00-4:00		
	Physiology Laboratory 4th Floor <i>Bressler</i> <i>Sect. A.</i> <i>Sect. B.</i> 1:00-5:00			Physiology Laboratory 4th Floor <i>Bressler</i> <i>Sect. A.</i> <i>Sect. B.</i> 1:00-5:00		

† Bacteriology Laboratory—Section work during the last month.

SECOND SEMESTER, JANUARY 26 TO JUNE 6, 1953

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Surgery <i>Bressler 2</i>	Surgery <i>Bressler 2</i>	Surgical Anatomy <i>Adm. 1</i>	Medical Clinic <i>Amp.</i> Dispensary Building	Physical Diagnosis <i>Adm. 1</i>	Orthopaedics <i>Bressler 2</i>
9.30 to 10.30	Pharmacology <i>Bressler 2</i>	Pharmacology <i>Bressler 2</i>	Surgical Anatomy Laboratory <i>Bressler 1</i>		Pharmacology <i>Bressler 2</i>	Obstetrics <i>Bressler 2</i>
10.30 to 11.30	Pathology <i>C. H.</i>	Pathology <i>C. H.</i>		Pathology <i>Adm. 1</i>	Pathology <i>C. H.</i>	
11.30	Lunch					
12.00 to 2.00	Pathology Laboratory	Pathology Laboratory	Immunology	Pathology Laboratory	Pathology Laboratory	
2.00 to 3.00	Surgical Anatomy <i>Adm. 1</i>	Immunology	Laboratory	Pharmacology Laboratory <i>Sect. A</i>	Pharmacology Laboratory <i>Sect. B</i>	
3.00 to 5.00	Surgical Anatomy Laboratory <i>Bressler 1</i>	Laboratory	Optional period Pathology Immunology	Physical Diagnosis <i>Sect. B</i> (3:00-5:00) <i>U. H. D.</i>	Physical Diagnosis <i>Sect. A</i> (3:00-5:00) <i>U. H. D.</i>	

|| Immunology Laboratory—Section work during last two months.

Locations of Lecture Halls and Laboratories:

Adm. 1—First Floor, Administration Building, 520 W. Lombard Street.

C. H.—Chemical Hall, Lower Hall, 522 W. Lombard Street.

Amp.—Wilson Memorial Amphitheatre, New University Hospital, Greene and Redwood Streets, Eighth Floor.

U. H. D.—University Hospital Dispensary, Old Hospital Building.

Laboratories:

Physiology, Pharmacology, Surgical Anatomy—Bressler Building.

Bacteriology, Immunology, Pathology, Second Floor, 31 S. Grecoe Street.

Mid-Year Examinations—January 19-24, 1953

Final Examinations—Begin May 24, 1953

THIRD YEAR SCHEDULE

SEPTEMBER 18, 1952 TO JUNE 6, 1953

SCHEDULE 1

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.20	(Whole Class) Obstetrics C. H. †Gynecology March 30 to May 11	(Whole Class) Surgery C. H.	(Whole Class) Obstetrics C. H. †Gynecology Mar. 25 to May 13	(Whole Class) Surgery C. H.	(Whole Class) Pathology C. H.	(Whole Class) Surgery C. H. †Anesthesiology Mar. 14 to May 16 Amp.
9.30 to 10.00	Transfer to Baltimore City Hospitals					
10.00 to 12.00	Physical Diagnosis, Pathology, Pediatrics and Neurology at B. C. H. (See Group Schedules)					
12.00 to 1.00	Transfer and Lunch	Transfer and Lunch	Lunch	Transfer and Lunch	Lunch	
1.00 to 2.00	(Whole Class) Nose & Throat, Urology, Otology, Proctology, Plastic Surgery C. H.	(Whole Class) *Gynecology †Eye—10 wks. Jan. 27 to Mar. 31 †Oncology —5 wks. Apr. 7 to May 5 C. H.	Medical Clinic B. C. H.	(Whole Class) Clinical Pathology Bressler 2	Obstetrics B. C. H.	
2.00 to 4.00	(Whole Class) Pathology Laboratory 31		Surgery	(Whole Class) Clinical Pathology	Surgery (2-3) B. C. H. Orthopaedics (3-4) B. C. H.	
4.00 to 5.00	(Whole Class) — † Legal Medicine § Industrial Medicine Psychiatry C. H.	(Whole Class) Hygiene and Public Health C. H.	Orthopaedics Roentgenology B. C. H.	— Laboratory Bressler 5	Neuro-Surgery B. C. H.	

* First Semester.

† Second Semester.

‡ Sept 22 to Dec. 8.

§ Dec. 15 to Feb. 9.

|| Feb. 16 to May 11

SCHEDULE 2

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8 30 to 9.20	(Whole Class) Obstetrics C. H. †Gynecology March 30 to May 11	(Whole Class) Surgery C. H.	(Whole Class) Obstetrics C. H. †Gynecology Mar. 25 to May 13	(Whole Class) Surgery C. H.	(Whole Class) Pathology C. H.	(Whole Class) Surgery C. H. Anaesthesiology Mar. 14 to May 16 Amp.
9.30 to 10.20	Pediatrics C. H.	Medicine ‡Pediatrics C. H.	Medicine ‡Pediatrics C. H.	Therapeutics ‡Pediatrics C. H.	Medicine ‡Pediatrics C. H.	Neurology C. H.
10.30 to 12.30	Operative Surgery—Bressler 6 Medical and Surgical Dispensaries—(Univ. and Mercy Sections)					
12.30 to 1.00	Lunch					
1.00 to 2.00	Same as Schedule 1		Medical Clinic Amp.	Same as Schedule 1		Psychiatry Dermatology U. H. Disp 1-4
2.00 to 4.00			Ophthalmoscopy ** (5 weeks) B. E. H. — Obstetrics ** (5 weeks) U. H. Disp. — Otology ** (5 weeks) Univ. Hosp. 3-C			
4.00 to 5.00						Obstetrics C. H.

The Junior Class will be divided into two sections—A and B. Each section reports to classes in keeping with the following schedule assignment, in which the letters represent the class sections and the numerals indicate the schedules to be followed for the periods shown.

‡ Pediatrics given the last week in each semester.

Schedule Assignment

Semester Periods:

September 18, 1952 to January 24, 1953.....A-1, B-2

January 26 to May 16, 1953.....B-1, A-2

** 5-week periods:

First Semester

Sept. 18—Oct. 22

Oct. 23—Dec. 3

Dec. 4—Jan. 17

Second Semester

Jan. 16—Feb. 28

Mar. 2—Apr. 2

Apr. 7—May 16

Sections and Schedules

Locations of Lecture Halls, etc.

Adm. 1.—First Floor, Administration Building, 520 W. Lombard Street.

A. H.—Anatomical Hall, Upper Hall, 522 W. Lombard Street.

Amp.—Wilsoo Memorial Amphitheatre, New University Hospital, Eighth Floor.

B. C. H.—Baltimore City Hosps., 4940 Eastern Ave.

B. E. H.—Baltimore Eye, Ear and Throat Hospital, 1214 Eutaw Place.

Bressler—Bressler Building, 29 S. Greene Street.

C. H.—Chemical Hall, Lower Hall, 522 W. Lombard Street.

Univ. Hosp.—New University Hospital, Greene and Redwood Streets.

U. H. Disp.—Old Hospital Building, S. W. Cor. Lombard and Greene Streets.

31—31 South Greene Street.

Clinical Pathology Laboratory—Fifth Floor, Bressler Building.

Pathology Laboratory—31 South Greene Street, Special Rooms, Basement.

Mid-Year Examinations—January 19-24, 1953

Final Examinations—Begin May 18, 1953

FOURTH YEAR SCHEDULE

SEPTEMBER 18, 1952 TO MAY 23, 1953

CLASS DIVISIONS*

Division 1†	Division 2	Division 3†	Division 4
Medicine and Medical Specialties (8 weeks) — Neurology Cardiology Gastro-Enterology Metabolism Allergy — Roentgenology	Pediatrics (4 weeks) — Psychiatry (4 weeks)	Surgery and Surgical Specialties (8 weeks) — Urology Neuro Surgery Otolaryngology and Rhinitis and Laryngology Orthopaedics — Roentgenology	Obstetrics (2 weeks) — Gynecology Oncology (2 weeks) — Dermatology & Syphilology Oncology Ophthalmology Anesthesiology (4 weeks)

STUDENT GROUP ASSIGNMENTS

1st Quarter	3rd Quarter
<p>Sept. 18, 1952 to Nov. 12, 1952 (8 weeks)</p> <p>Groups 1, 2, 3, 4 to Division 1† Groups 5, 6, 7, 8 to Division 2 Groups 9, 10, 11, 12 to Division 3† Groups 13, 14, 15, 16 to Division 4</p>	<p>Jan. 26, 1953 to March 21, 1953 (8 weeks)</p> <p>Groups 1, 2, 3, 4 to Division 3† Groups 5, 6, 7, 8 to Division 4 Groups 9, 10, 11, 12 to Division 1† Groups 13, 14, 15, 16, to Division 2</p>
2nd Quarter	4th Quarter
<p>Nov. 13, 1952 to Jan. 24, 1953 (8 weeks)</p> <p>Groups 1, 2, 3, 4 to Division 2 Groups 5, 6, 7, 8 to Division 3† Groups 9, 10, 11, 12 to Division 4 Groups 13, 14, 15, 16 to Division 1†</p>	<p>March 23, 1953 to May 23, 1953 (8 weeks)</p> <p>Groups 1, 2, 3, 4 to Division 4 Groups 5, 6, 7, 8 to Division 1† Groups 9, 10, 11, 12 to Division 2 Groups 13, 14, 15, 16 to Division 3†</p>

* The curriculum is arranged into 4 divisions, and the senior class into 16 groups.

† The curriculum of Divisions 1 and 3 is given at the University and Mercy Hospitals simultaneously. There are 4 groups assigned to each division. Two groups or one half the students of each division are assigned work for 4 weeks at each hospital. Students belonging to groups 1, 2, 9 and 10 report to the University Hospital for the 1st 4 weeks. Groups 3, 4, 11 and 12 report to Mercy. At the end of 4 weeks the students at the University Hospital report to Mercy and the groups at Mercy report to the University Hospital for a similar period, thus completing for each group involved one division of work.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS

GRADUATES, JUNE 7, 1952

ADAMS, CHARLES BAIRD, JR. Maryland	GRECO, WILLIAM RICHARD Maryland
ADELSTEIN, BENJAMIN ALFORD, A.B.	GRUBB, ROBERT ALVIN Maryland
Pennsylvania	HANKOFF, LEON DUDLEY Maryland
ADKINS, CHARLES GLEN West Virginia	HARRIS, WILLIAM BENJAMIN, A.B.
AHLQUIST, RICHARD ELMER, JR., A.B.	North Carolina
Washington	HEIMER, WILLIAM LENOX, B.S. Maryland
ALDERMAN, GEORGE CARL, JR., B.S.	HOLMES, CHARLES MARTIN Maryland
Maryland	HOUCK, ROMULUS VANCE, JR. Maryland
ANDREWS, JAMES WILLIAM, B.S. Ohio	HUDGINS, WILLIAM BAIRD, A.B. Georgia
ATKINS, RAYMOND MELVIN Maryland	HUNTER, DEWITT TALMAGE, JR., B.S.
BAKAL, DANIEL, B.S. Maryland	Virginia
BAKER, TIMOTHY DANFORTH, A.B.	HUNTER, LAUREL VIRGINIA Maryland
Maryland	HYATT, IRVIN, B.S. Maryland
BERGOFKY, EDWARD HAROLD Maryland	KELLER, FRANKLIN LLOYD, A.B. Maryland
BERRIOS-JIMENEZ, OSVALDO Puerto Rico	KLINE, FRANK MENESEE Maryland
BRIDGES, JACK ARTHUR Washington	KNELL, JOSEPH ANTHONY, JR., A.B.
BRITTAIN, LOWELL ELLIS, A.B.	Maryland
North Carolina	KRAGER, JOHN MARTIN, B.S. Maryland
BROOKS, JAMES BURCH, B.S. Maryland	KRAMER, IRVIN Maryland
BROWN, WILLIAM MORRIS, JR., A.B.	KRIEGER, MORTON MORRIS Maryland
Georgia	LAPP, HERBERT WALTER New Jersey
CARROLL, JOHN EDWARD, JR. Maryland	LIGHTBODY, CHARLES HARRY, A.B. Maine
CARSON, JACK OLIVER, B.S.	LOVE, ROBERT GEORGE, B.S.
North Carolina	Massachusetts
CLYMAN, DANIEL, B.S. Maryland	MATHEWS, WILLIAM ALLEN, A.B. Ohio
COHEN, PHIN. Maryland	McKAY, JOHN NELSON Maryland
CULPEPPER, STUART PITNER, B.S. Florida	OLSEN, RICHARD YOUNG, A.B. California
DEVLIN, ANDREW JOSEPH, B.S.	PERRY, BENTON BLOCH, B.S. Maryland
Washington	PHELPS, JAMES SOLOMON, JR., B.S.
DIGGS, ANDREW MONROE, B.S.	North Carolina
North Carolina	PILLSBURY, WILLIAM ANDREW, JR.
DiGIOVANNI, ANTHONY JOHN, A.B.	Maryland
Maryland	RAMIREZ-SANTISTEBAN, GILBERTO
DOUGLAS, ROBERT ARNOLD, B.S. Florida	Puerto Rico
DOUGLASS, ROBERT CORL, JR., B.S. Ohio	RAPPEPORT, JONAS RALPH Maryland
DUNFORD, WILLIAM STANLEY, JR., B.S.	RASMUSSEN-TAXDAL, DAVID SAMUEL
Utah	Pennsylvania
ECKERT, HERBERT LEWIS Maryland	REED, JULIAN WARD, B.S. Maryland
EGBERT, LAWRENCE DEEMS, JR., A.B.	ROBBINS, MALCOLM LEE Maryland
Maryland	ROSSON, WILLIAM DANIEL Maryland
ELGIN, LEE WILLIAM, JR. Florida	SCHIMMEL, BELLA FAYE, B.S. Maryland
ELLIOTT, CHARLES STANLEY Florida	SHARRETT, JOHN OLIVER Maryland
FESKI, JOSEPH PAUL Pennsylvania	SHOFF, MAHLON JAMES, A.B. Delaware
FINE, JACK Maryland	SINDLER, RICHARD ARNOLD, A.B.
FOLEY, MICHAEL JOSEPH West Virginia	Maryland
FRITZ, LOUIS ALBERT, B.S. Maryland	SLAGER, URSULA TRAUOGOTT, A.B.
GEHARDT, ROBERT WILLIAM Maryland	Maryland
GILLIAM, CHARLES FRANKLIN, A.B.	SMITH, BOLYSTON DANDRIDGE
North Carolina	West Virginia
GISLASON, PAUL HAROLD, A.B.	SMITH, GEORGE HERBERT, A.B. Maine
North Dakota	SMOOT, AUBREY CANNON, JR. Delaware
GONZALEZ-RIVERA, LUIS FELIPE	SPRITZ, NORTON, A.B. Maryland
Puerto Rico	STAMBLER, ALVIN ABRAHAM Maryland
GORE, JAY CALVIN, A.B. Maryland	STARLING, CHARLES RAY, B.S.
GRABILL, JAMES RODNEY Maryland	North Carolina
GRAHAM, DAVID ERIC, B.S. North Carolina	TRACE, ROBERT JAMES Wisconsin
GRAYBEAL, CLARENCE EDWARD Maryland	

TROUTMAN, BELK CONNOR. North Carolina	WEEKS, HOWARD NELSON, B.S. . . . Maryland
VICENS, CARLOS NATHANIEL, B.S. . . . Puerto Rico	WILDBERGER, ALBERT JOHN, A.B. . . . Maryland
WALLACE, SCOTT PYPER, A.B. Utah	WILKINSON, JOHN ROSS, JR., A.B. . . . North Carolina
WALSH, HARRY MARTIN, B.S. . . . Maryland	WOLFEL, DONALD ANTHONY Maryland
WARREN, BRYAN POPE, JR. Maryland	WOLVERTON, WILLIAM ROGER, A.B. . . . West Virginia
WATTERS, JOHN LORD, A.B. North Carolina	

HONORS

UNIVERSITY PRIZE GOLD MEDAL

WILLIAM ALLEN MATHEWS

CERTIFICATE OF HONOR

EDWARD HAROLD BERGOFKY

DANIEL CLYMAN

LEON DUDLEY HANKOFF

RICHARD ELMER AHLQUIST, JR.

ALBERT ABRAHAM STAMBLER

THE DR. A. BRADLEY GAITHER MEMORIAL PRIZE

JAMES SOLOMON PHELPS, JR.

THE WILLIAM D. WOLFE MEMORIAL PRIZE AND CERTIFICATE OF PROFICIENCY

RICHARD ELMER AHLQUIST, JR.

THE LEONARD M. HUMMEL MEDAL AND CERTIFICATE OF PROFICIENCY

WILLIAM ALLEN MATHEWS

INTERNSHIPS—GRADUATES OF JUNE 7, 1952

July 1, 1952—June 30, 1953

ADAMS, CHARLES BAIRD, JR.	University Hospital, Baltimore, Md.
ADELSTEIN, BENJAMIN ALFRED.	University Hospital, Baltimore, Md.
ADKINS, CHARLES GLEN	White Cross Hospital, Columbus, Ohio
AHLQUIST, RICHARD ELMER, JR.	

University of California Hospital, San Francisco, California

ALDERMAN, GEORGE CARL	University Hospital, Baltimore, Md.
ANDREWS, JAMES WILLIAMS	Jackson Memorial Hospital, Miami, Florida
ATKINS, RAYMOND MELVIN	U.S. Public Health Service Hospital, Baltimore, Md.
BAKAL, DANIEL	Sinai Hospital of Baltimore, Inc., Baltimore, Md.
BAKER, TIMOTHY DANFORTH	University Hospital, Baltimore, Md.
BERGOFKY, EDWARD HAROLD	Mt. Sinai Hospital, New York, N. Y.
BERRIOS-JIMENEZ, OSVALDO	Doctors Hospital, Washington, D. C.
BRIDGES, JACK ARTHUR	Good Samaritan Hospital, Portland, Oregon
BRITTAIN, LOWELL ELLIS	Rex Hospital, Raleigh, N. C.
BROOKS, JAMES BURCH	Union Memorial Hospital, Baltimore, Md.
BROWN, WILLIAM MORRIS, JR.	Grady Memorial Hospital, Atlanta, Georgia
CARROLL, JOHN EDWARD, JR.	Bon Secours Hospital, Baltimore, Md.
CARSON, JACK OLIVER	Rex Hospital, Raleigh, N. C.
CLYMAN, DANIEL	Jewish Hospital of Brooklyn, Brooklyn, N. Y.
COHEN, PHIN	Duke Hospital, Durham, N. C.

CULPEPPER, STUART PITNER.....	Rex Hospital, Raleigh, N. C.
DEVLIN, ANDREW JOSEPH.....	White Cross Hospital, Columbus, Ohio.
DIGGS, ANDREW MONROE....	George Washington University Hospital, Washington, D. C.
DiGIOVANNI, ANTHONY JOHN.....	Lutheran Hospital of Maryland, Inc., Baltimore, Md.
DOUGLAS, ROBERT ARNOLD.....	U.S. Naval Hospital, San Diego, California
DOUGLASS, ROBERT CORL, JR.....	Wayne County General Hospital, Eloise, Michigan
DUNFORD, WILLIAM STANLEY, JR.....	U.S. Public Health Service Hospital, Seattle, Wash.
ECKERT, HERBERT LEWIS.....	University Hospital, Baltimore, Md.
EGBERT, LAWRENCE DEEMS.....	Garfield Memorial Hospital, Washington, D. C.
ELGIN, LEE WILLIAM, JR.....	University Hospital, Baltimore, Md.
ELLIOTT, CHARLES STANLEY.....	Henry Ford Hospital, Detroit, Michigan
FISHER, JOSEPH PAUL.....	McKeesport Hospital, McKeesport, Pennsylvania
FINE, JACK.....	Sinai Hospital of Baltimore, Inc., Baltimore, Md.
FOLEY, MICHAEL JOSEPH.....	University Hospital, Baltimore, Md.
FRITZ, LOUIS ALBERT.....	St. Joseph's Hospital, Baltimore, Md.
GEBHARDT, ROBERT WILLIAM.....	Cedars of Lebanon Hospital, Los Angeles, Calif.
GILLIAM, CHARLES FRANKLIN.....	Charlotte Memorial Hospital, Charlotte, N. C.
GISLASON, PAUL HAROLD.....	Abington Memorial Hospital, Abington, Penna.
GONZALEZ-RIVERA, LUIS FELIPE.....	University Hospital, Baltimore, Md.
GORE, JAY CALVIN.....	Riverside Hospital, Toledo, Ohio
GRABILL, JAMES RODNEY.....	Bon Secours Hospital, Baltimore, Md.
GRAHAM, DAVID ERIC.....	Charlotte Memorial Hospital, Charlotte, N. C.
GRAYBEAL, CLARENCE EDWARD.....	Delaware Hospital, Wilmington, Delaware
GRECO, WILLIAM RICHARD.....	University Hospital, Baltimore, Md.
GRUBB, ROBERT ALVIN.....	Harrisburg Polyclinic, Harrisburg, Pennsylvania
HANKOFF, LEON DUDLEY.....	Kings County Hospital, Brooklyn, N. Y.
HARRIS, WILLIAM BENJAMIN.....	Los Angeles County General Hospital, Los Angeles, California
HEIMER, WILLIAM LENOX.....	University Hospital, Baltimore, Md.
HOLMES, CHARLES MARTIN.....	Central Dispensary and Emergency Hospital, Washington, D. C.
HOUCK, ROMULUS VANCE, JR.....	St. Agnes Hospital, Baltimore, Maryland.
HUDGINS, WILLIAM BAIRD.....	Grady Memorial Hospital, Atlanta, Georgia
HUNTER, DeWITT TALMAGE, JR.....	
HUNTER, LAUREL VIRGINIA.....	University Hospital, Baltimore, Md.
HYATT, IRVIN.....	Beth Israel Hospital, New York, N. Y.
KELLER, FRANKLIN LLOYD.....	Lutheran Hospital of Maryland, Inc., Baltimore, Md.
KLINE, FRANK MENEFEE.....	Cincinnati General Hospital, Cincinnati, Ohio
KNELL, JOSEPH ANTHONY, JR.....	St. Joseph's Hospital, Baltimore, Md.
KRAGER, JOHN MARTIN.....	St. Joseph's Hospital, Baltimore, Md.
KRAMER, IRVING.....	Sinai Hospital of Baltimore, Inc., Baltimore, Md.
KRIEGER, MORTON MORRIS.....	Mt. Sinai Hospital, Cleveland, Ohio
LAPP, HERBERT WALTER.....	Bon Secours Hospital, Baltimore, Md.
LIGHTBODY, CHARLES HARRY.....	Worcester City Hospital, Worcester, Mass.
LOVE, ROBERT GEORGE.....	Salem Hospital, Salem, Mass.
MATHEWS, WILLIAM ALLEN.....	U.S. Public Health Service Hospital, Baltimore, Maryland
McKAY, JOHN NELSON.....	Bon Secours Hospital, Baltimore, Md.
OLSEN, RICHARD YOUNG.....	Hospital of the Good Samaritan, Los Angeles, Cal.
PERRY, BENTON BLOCH.....	Jackson Memorial Hospital, Miami, Florida
PHELPS, JAMES SOLOMON, JR.....	Charlotte Memorial Hospital, Charlotte, N. C.

PILLSBURY, WILLIAM ANDREW	Bon Secours Hospital, Baltimore, Md.
RAMIREZ-SANTISTEBAN, GILBERTO	University Hospital, Baltimore, Md.
RAPPEPORT, JONAS RALPH	Michael Reese Hospital, Chicago, Illinois
RASMUSSEN-TAXDAL, DAVID SAMUEL	University Hospital, Baltimore, Md.
REED, JULIAN WARD	U.S. Naval Hospital, St. Albans, Long Island, N. Y.
ROBBINS, MALCOLM LEE	Sinai Hospital of Baltimore, Inc., Baltimore, Md.
ROSSON, WILLIAM DANIEL	Lutheran Hospital of Maryland, Inc., Baltimore, Md.
SCHIMMEL, BELLA FAYE	Los Angeles County General Hospital, Los Angeles, California
SHARRETT, JOHN OLIVER	University Hospital, Baltimore, Md.
SHOFF, MAHLON JAMES	U.S. Public Health Service Hospital, Seattle, Washington
SINDLER, RICHARD ARNOLD	Sinai Hospital of Baltimore, Inc., Baltimore, Md.
SLAGER, URSULA TRAUTGOTT	University Hospital, Baltimore, Md.
SMITH, BOYLSTON DANDRIDGE, JR.	U.S. Public Health Service Hospital, New Orleans, La.
SMITH, GEORGE HERBERT	University Hospital, Baltimore, Md.
SMOOT, AUBREY CANNON, JR.	Delaware Hospital, Wilmington, Del.
SPRITZ, NORTON	Bellevue Hospital, Cornell Medical Division, N. Y.
STAMBLER, ALVIN ABRAHAM	Beth Israel Hospital, New York
STARLING, CHARLES RAY	University Hospital, Chapel Hill, N. C.
TRACE, ROBERT JAMES	Johns Hopkins Hospital, Baltimore, Md.
TROUTMAN, BELK CONNOR	James Walker Memorial Hospital, Wilmington, N. C.
VICENS, CARLOS NATHANIEL	San Juan City Hospital, San Juan, Puerto Rico
WALLACE, SCOTT PYPER	Tripler General Hospital, Oahu, Hawaii
WALSH, HARRY MARTIN	University Hospital, Baltimore, Md.
WARREN, JR., BRYAN POPE	Syracuse University Medical Center Hospital, N. Y.
WATTERS, JOHN LORD	University Hospital, Chapel Hill, N. C.
WEEKS, HOWARD NELSON	St. Vincent's Hospital, Bridgeport, Conn.
WILDBERGER, ALBERT JOHN	University Hospital, Baltimore, Md.
WILKINSON, JR., JOHN ROSS	Walter Reed General Hospital, Washington, D. C.
WOLFEL, DONALD ANTHONY	University Hospital, Baltimore, Md.
WOLVERTON, WILLIAM ROGER	Charleston General Hospital, Charleston, W. Va.

MATRICULANTS

SENIOR CLASS, SEPTEMBER 20, 1951 TO JUNE 7, 1952

ADAMS, CHARLES BAIRD, JR., <i>University of Maryland</i>	Maryland
ADELSTEIN, BENJAMIN ALFRED, A.B., <i>University of Pennsylvania, 1948</i>	Pennsylvania
ADKINS, CHARLES GLEN, <i>West Virginia University</i>	West Virginia
AHLQUIST, RICHARD ELMER, JR., A.B., <i>Stanford University, 1948</i>	Washington
ALDERMAN, GEORGE CARL, JR., B.S., <i>Loyola College, 1949</i>	Maryland
ANDREWS, JAMES WILLIAM, B.S., <i>Muskingum College, 1948</i>	Ohio
ATKINS, RAYMOND MELVIN, <i>University of Maryland</i>	Maryland
BAKAL, DANIEL, B.S., <i>Loyola College, 1948</i>	Maryland
BAKER, TIMOTHY DANFORTH, A.B., <i>Johns Hopkins University, 1948</i>	Maryland
BERGOFKY, EDWARD HAROLD, <i>University of Maryland</i>	Maryland
BERRIOS, OSVALDO, <i>University of Puerto Rico</i>	Puerto Rico
BRIDGES, JACK ARTHUR, <i>University of Maryland</i>	Maryland
BRITTAIN, LOWELL ELLIS, A.B., <i>University of North Carolina, School of Medicine, September 1948 to June 1950</i>	North Carolina
BROOKS, JAMES BURCH, B.S., <i>Loyola College, 1948</i>	Maryland
BROWN, WILLIAM MORRIS, JR., A.B., <i>Mercer University, 1948</i>	Georgia
CARROLL, JOHN EDWARD, JR., <i>Loyola College</i>	Maryland
CARSON, JACK OLIVER, B.S., <i>University of North Carolina, School of Medicine, September 1948 to June 1950</i>	North Carolina
CLYMAN, DANIEL, B.S., <i>University of Maryland, 1948</i>	Maryland

COHEN, PHIN, <i>Duke University</i>	Maryland
CULPEPPER, STUART PITNER, B.S., <i>University of Georgia, 1948</i>	Florida
DEVLIN, ANDREW JOSEPH, B.S., <i>Gonzaga University, 1948</i>	Washington
DIGGS, ANDREW MONROE, B.S., <i>University of North Carolina, School of Medicine, September 1948 to June 1950</i>	North Carolina
DI GIOVANNI, ANTHONY JOHN, A.B., <i>Johns Hopkins University, 1948</i>	Maryland
DOUGLAS, ROBERT ARNOLD, B.S., <i>J. B. Stetson University, 1948</i>	Florida
DOUGLASS, ROBERT CORL, JR., B.S., <i>University of Toledo, 1947</i>	Ohio
DUNFORD, WILLIAM STANLEY, JR., B.S., <i>Brigham Young University, 1948</i>	Utah
ECKERT, HERBERT LEWIS, <i>University of Maryland</i>	Maryland
EGBERT, LAWRENCE DEEMS, JR., A.B., <i>Johns Hopkins University, 1948</i>	Maryland
ELGIN, LEE WILLIAM, JR., <i>University of Florida</i>	Florida
ELLIOTT, CHARLES STANLEY, <i>Emory University</i>	Florida
FISHER, JOSEPH PAUL, <i>University of Pittsburgh</i>	Pennsylvania
FINE, JACK, <i>University of Maryland</i>	Maryland
FOLEY, MICHAEL JOSEPH, <i>West Virginia University</i>	West Virginia
FRTZ, LOUIS ALBERT, B.S., <i>Loyola College, 1948</i>	Maryland
GEHARDT, ROBERT WILLIAM, <i>University of Maryland</i>	Maryland
GILLIAM, CHARLES FRANKLIN, A.B., <i>University of North Carolina, School of Medicine, September 1948 to June 1950</i>	North Carolina
GISLASON, PAUL HAROLD, A.B., <i>University of North Dakota, 1948</i>	North Dakota
GONZALEZ, LUIS FELIPE, <i>University of Maryland</i>	Puerto Rico
GORE, JAY CALVIN, A.B., <i>Western Maryland College, 1948</i>	Maryland
GRABILL, JAMES RODNEY, <i>Georgetown University, American University</i>	Maryland
GRAHAM, DAVID ERIC, B.S., <i>University of North Carolina, Medical School, September 1948 to June 1950</i>	North Carolina
GRAYBEAL, CLARENCE EDWARD, <i>University of Maryland</i>	Maryland
GRECO, WILLIAM RICHARD, <i>University of Maryland</i>	Maryland
GRUBB, ROBERT ALVIN, <i>University of Maryland</i>	Maryland
HANKOFF, LEON DUDLEY, <i>University of Maryland</i>	Maryland
HARRIS, WILLIAM BENJAMIN, A.B., <i>University of North Carolina, School of Medicine, September 1948 to June 1950</i>	North Carolina
HEIMER, WILLIAM LENOX, B.S., <i>University of Maryland, 1948</i>	Maryland
HOLMES, CHARLES MARTIN, <i>University of Miami</i>	Maryland
HOUCK, ROMULUS VANCE, JR., <i>University of Maryland</i>	Maryland
HUDGINS, WILLIAM BAIRD, A.B., <i>Emory University, 1948</i>	Georgia
HUNTER, DEWITT TALMADE, JR., B.S., <i>U. S. Naval Academy, 1945</i>	Virginia
HUNTER, LAUREL MULLINS, A.B., <i>Westhampton College, 1948</i>	Maryland
HYATT, IRVIN, B.S., <i>University of Maryland</i>	Maryland
KELLER, FRANKLIN LLOYD, A.B., <i>Gettysburg College, 1945</i>	Maryland
KLINE, FRANK MENESEE, <i>University of Maryland</i>	Maryland
KNELL, JOSEPH ANTHONY, JR., A.B., <i>Loyola College, 1948</i>	Maryland
KRAGER, JOHN MARTIN, B.S., <i>Loyola College, 1948</i>	Maryland
KRAMER, IRVIN, <i>New York University</i>	Maryland
KRIEGER, MORTON MORRIS, <i>University of Maryland</i>	Maryland
LAPP, HERBERT WALTER, <i>Seton Hall College</i>	New Jersey
LIGHTBODY, CHARLES HARRY, A.B., <i>Colby College, 1948</i>	Maine
LOVE, ROBERT GEORGE, B.S., <i>Massachusetts University, 1947</i>	Massachusetts
MATHEWS, WILLIAM ALLEN, <i>Westminster College, A.B., Wittenberg College</i>	Ohio
McKAY, JOHN NELSON, <i>Ohio Wesleyan University, Gettysburg College</i>	Maryland
OLSEN, RICHARD YOUNG, A.B., <i>University of California, 1948</i>	California
PERRY, BENTON BLOCH, B.S., <i>University of Chicago, 1947</i>	Maryland
PHELPS, JAMES SOLOMON, JR., B.S., <i>University of North Carolina, 1948, School of Medicine, September 1948 to June 1950</i>	North Carolina
PILLSBURY, WILLIAM ANDREW, JR., <i>University of Oregon, Loyola College</i>	Maryland
RAMIREZ-SANTISTEBAN, GILBERTO, <i>University of Puerto Rico</i>	Puerto Rico
RAPPEPORT, JONAS RALPH, <i>University of Maryland</i>	Maryland
RASMUSSEN-TAXDAL, DAVID SAMUEL, <i>University of Maryland</i>	Pennsylvania
REED, JULIAN WARD, B.S., <i>University of Maryland</i>	Maryland
ROBBINS, MALCOLM LEE, <i>University of Maryland</i>	Maryland
ROSSON, WILLIAM DANIEL, <i>University of Maryland</i>	Maryland
SCHIMMEL, BELLA FAYE, B.S., <i>University of Michigan, 1948</i>	Maryland

SHARRETT, JOHN OLIVER, <i>University of Virginia</i>	Maryland
SHOFF, MAHLON JAMES, A.B., <i>University of Delaware, 1948</i>	Delaware
SINDLER, RICHARD ARNOLD, A.B., <i>Johns Hopkins University, 1948</i>	Maryland
SLAGER, URSULA TRAUOGOTT, A.B., <i>Wellesley College, 1948</i>	Maryland
SMITH, BOLYSTON DANDRIDGE, <i>West Virginia University</i>	West Virginia
SMITH, GEORGE HERBERT, A.B., <i>Clark University, 1948</i>	Maine
SMOOT, AUBREY CANNON, JR., <i>University of Delaware</i>	Delaware
SPRITZ, NORTON, A.B., <i>Johns Hopkins University, 1948</i>	Maryland
STAMBLER, ALVIN ABRAHAM, <i>University of Maryland</i>	Maryland
STARLING, CHARLES RAY, B.S., <i>University of North Carolina, School of Medicine, September 1948 to June 1950</i>	North Carolina
TRACE, ROBERT JAMES, <i>University of Wisconsin</i>	Wisconsin
TROUTMAN, BELK CONNOR, <i>University of North Carolina, School of Medicine, September 1948 to June 1950</i>	North Carolina
VICENS, CARLOS NATHANIEL, B.S., <i>University of Puerto Rico, 1948</i>	Puerto Rico
WALLACE, SCOTT, PYPER, A.B., <i>University of Utah, 1948</i>	Utah
WALSH, HARRY MARTIN, B.S., <i>Washington College, 1948</i>	Maryland
WARREN, BRYAN POPE, JR., <i>University of Maryland</i>	Maryland
WATERS, JOHN LORD, A.B., <i>University of North Carolina, School of Medicine, September 1948 to June 1950</i>	North Carolina
WEEKS, HOWARD NELSON, B.S., <i>Franklin & Marshall, 1948</i>	Maryland
WILDBERGER, ALBERT JOHN, A.B., <i>Western Maryland College, 1948</i>	Maryland
WILKINSON, JOHN ROSS, JR., A.B., <i>University of North Carolina, School of Medicine, September 1948 to June 1950</i>	North Carolina
WOLFEL, DONALD ANTHONY, <i>University of Maryland</i>	Maryland
WOLVERTON, WILLIAM ROGER, A.B., <i>West Virginia University, 1948</i>	West Virginia

JUNIOR CLASS, SEPTEMBER 20, 1951 TO JUNE 7, 1952

ARP, LOUIS CROFT, JR., A.B., <i>State University of Iowa, 1949</i>	Illinois
BALDWIN, RICHARD MOFFETT, B.S., <i>Loyola College, 1949</i>	Maryland
BANKS, JAMES LEROY, JR., B.S., <i>Furman University, 1949</i>	South Carolina
BASTIAN, GRACE ARLENE, B.S., <i>Johns Hopkins University, 1949</i>	Maryland
BECK, GEORGE HENRY, A.B., <i>Western Maryland College, 1949</i>	Maryland
BERKELEY, SCOTT BRUCE, JR., A.B., <i>University of North Carolina, 1949, School of Medicine, September 1949 to June 1951</i>	North Carolina
BERKOW, ROBERT, B.S., <i>University of Maryland, 1949</i>	Maryland
BLUMENFELD, SAMUEL, A.B., <i>University of Maryland, 1949</i>	Maryland
BOGGS, JAMES ERNEST, A.B., <i>West Virginia University, 1949</i>	West Virginia
BOVE, JOSEPH RICHARD, B.S., <i>University of Maryland</i>	New Jersey
BRINKLEY, GEORGE ROSS, JR., A.B., <i>West Virginia University, 1949</i>	West Virginia
BULLUCK, DAVID ERNEST, JR., B.S., <i>University of North Carolina, 1949, School of Medicine, September 1949 to June 1951</i>	North Carolina
BURKART, THOMAS JOSEPH, B.S., <i>Loyola College, 1949</i>	Ohio
BYERLY, WALTER HOUCK, A.B., <i>Johns Hopkins University, 1949</i>	Maryland
BYRNES, BERNARD JOSEPH, JR., B.S., <i>Loyola College, 1949</i>	Maryland
CARROLL, CHARLES FISHER, JR., B.S., <i>Guilford College, 1949</i>	North Carolina
CARTER, DONALD SWEETSER, <i>Duke University</i>	Maryland
CLIFT, JOHN VINTON, B.S., <i>Hampden-Sydney College, 1949</i>	Maryland
CODINGTON, JOHN BONNELL, B.S., <i>Davidson College, 1949</i>	North Carolina
COHEN, JEROME, B.S., <i>University of Maryland</i>	Maryland
COLON-LUGO, SALOMON, <i>University of Puerto Rico</i>	Puerto Rico
DOERNER, WYAND FRANCIS, JR., B.S., <i>Mt. St. Mary's College, 1949</i>	Maryland
DOWELL, ROWLAND JUDSON, <i>University of Utah</i>	Utah
DUMLER, JOHN DONALD, B.S., <i>University of Maryland</i>	Maryland
EDLOW, JULES BERNARD, B.S., <i>University of Maryland</i>	Maryland
EYE, HARRY LUKE, A.B., <i>West Virginia University, 1949</i>	West Virginia
FIROO, HUGH VALENTINE, <i>University of Georgia</i>	Georgia
FLAX, LEONARD HAROLD, B.S., <i>University of Maryland</i>	Maryland
FRIMAN, SYLVAN, B.S., <i>University of Maryland, 1949</i>	Maryland
GARLOCK, FREDERICK ADAMS, B.S., <i>University of Maryland</i>	Maryland
GARRISON, JOSEPH SHERMER, 3d, A.B., <i>Western Maryland College, 1949</i>	Maryland
GEVAS, GEORGE, B.S., <i>University of Maryland, 1949</i>	Maryland

GILLOTTE, JOSEPH PATRICK, B.S., <i>University of Maryland</i>	Connecticut
GLICK, LEONARD BARRY, B.S., <i>University of Maryland</i>	Maryland
GOLDSTEIN, ROBERT BRUCE, <i>University of Maryland</i>	Maryland
HARTMAN, JOHN MCMASTER, A.B., <i>West Virginia University, 1949</i>	West Virginia
HEISSE, JOHN WILBUR, JR., A.B., <i>Johns Hopkins University, 1949</i>	Maryland
HENSON, KENNETH CLIFFORD, B.S., <i>Salem College, 1949</i>	Maryland
HERBERT, THOMAS FRANKLYN, <i>Johns Hopkins University</i>	Maryland
HESS, CHARLES FRANKLIN, A.B., <i>McPherson College, 1949</i>	Pennsylvania
HIMMELWRIGHT, GEORGE OVERTON, B.S., <i>University of Maryland</i>	Maryland
HOLDER, WILLIAM LEWIS, A.B., <i>Emory University, 1949</i>	Georgia
HUNTLEY, EARL STUART, JR., A.B., <i>University of North Carolina, 1949, School of Medicine, September 1949 to June 1951</i>	Florida
JONES, HENRY ALBERT, JR., <i>Johns Hopkins University</i>	Maryland
JONES, THOMAS LAWSON, B.S., <i>University of Maryland</i>	Maryland
JUDGE, WALTER FRANCIS, B.S., <i>University of Notre Dame, 1949</i>	New Jersey
KAESE, WERNER ERICH, B.S., <i>Albright College, 1949</i>	Pennsylvania
KARN, WILLIAM NICHOLAS, JR., <i>Alfred University</i>	Maryland
KINGSBURY, ROBERT COBURN, B.S., <i>University of Maryland</i>	Maryland
KISER, WILLIAM SITES, B.S., <i>University of Maryland</i>	West Virginia
KNIGHT, ARTHUR CLYDE, <i>University of Montana</i>	Montana
LAMBERT, ROBERT YOUNG, A.B., <i>Emory University, 1949</i>	South Carolina
LANGRALL, HARRISON MORTON, JR., A.B., <i>Johns Hopkins University, 1949</i>	Maryland
LEE, BENJAMIN BUCK, A.B., <i>Johns Hopkins University, 1949</i>	Maryland
LEIGHTON, HERBERT HOUCK, <i>Western Maryland College</i>	Maryland
LEVINE, ROBERT LEE, B.S., <i>University of Maryland</i>	Maryland
LONGO-CORDERO, RAFAEL, <i>University of Puerto Rico</i>	Puerto Rico
MADGE, GORDON EVANS, <i>College of William and Mary</i>	Maryland
MCCRACKEN, JESSE WILLIAM, B.S., <i>Guilford College, 1949, University of North Carolina, School of Medicine, September 1949 to 1951</i>	North Carolina
McFADDEN, ARCHIBALD WEEMS, B.S., <i>University of Maryland</i>	Maryland
MENDELSON, RONALD EDWARD, B.S., <i>University of Maryland, 1949</i>	Maryland
METCALF, JOHN WILLIAM, JR., <i>Kent State University</i>	Ohio
MIDDLETON, BENJAMIN MARTIN, <i>University of Maryland</i>	Maryland
MIGHT, JAMES EDWARD, A.B., <i>Wittenberg College, 1949</i>	Ohio
MILES, LESLIE ROY, JR., A.B., <i>West Virginia University, 1949</i>	Pennsylvania
MILLER, GEORGE HENRY, B.S., <i>University of Maryland</i>	Maryland
MILLER, NORMAN LOUIS, B.S., <i>University of Maryland</i>	Maryland
NOVEY, RIVA ESTHER, A.B., <i>Goucher College, 1935, M.S., Smith College, 1938</i> ...	Maryland
PALMISANO, JOSEPH FRANK, B.S., <i>University of Maryland</i>	Maryland
PECK, GEORGE CHARLES, A.B., <i>Johns Hopkins University, 1949</i>	Maryland
POWDER, JAMES RICHARD, A.B., <i>Johns Hopkins University, 1949</i>	Maryland
QUINN, CORBETT, LATIMER, A.B., <i>University of North Carolina, 1949, School of Medicine, September 1949 to June 1951</i>	North Carolina
READ, JAMES LAMAR, B.S., <i>University of Maryland, 1949</i>	Maryland
RICHARDSON, JOE BERNAL, A.B., <i>Emory University, 1949</i>	Georgia
RICHMOND, LEWIS CASS, JR., <i>Duke University</i>	West Virginia
ROWE, JAMES EARLE, JR., B.S., <i>University of Maryland</i>	Maryland
SCHINDLER, RICHARD ELIAS, B.S., <i>University of Maryland</i>	Maryland
SHUMAN, JOSEPH ELLYN, B.S., <i>Washington College, 1949</i>	Maryland
SINGLETON, ROBERT TIFFANY, B.S., <i>University of Maryland</i>	Maryland
SKAGGS, THOMAS WAYNE, B.S., <i>University of Miami, 1947</i>	Florida
SLASMAN, WILLIAM HOWRY, JR., A.B., <i>Johns Hopkins University, 1949</i>	Maryland
SMITH, WILLIAM MEREDITH, JR., B.S., <i>Mt. St. Mary's College, 1949</i>	Maryland
SPUDIS, EDWARD VERHINES, B.S., <i>University of Maryland</i>	Washington, D. C.
TEMPLETON, WILLIAM PENDLETON, B.S., <i>University of Maryland</i>	Maryland
TREIBER, MARTIN WILLIAM, B.S., <i>University of Maryland, 1948</i>	Maryland
TROXEL, JAMES ROY, A.B., <i>Johns Hopkins University, 1948</i>	Maryland
TYSON, WILLIAM ALVA WAY, B.S., <i>Dickinson College, 1949</i>	Maryland
VANCE, ARNOLD LEONARD, B.S., <i>University of Maryland</i>	Maryland
WALTER, HERBERT GUY, JR., <i>University of Nevada</i>	Nevada
WATSON, JACK THOMAS, B.S., <i>U. S. Naval Academy, 1945</i>	West Virginia
WEAVER, KARL HANNA, <i>West Virginia University</i>	West Virginia
WEBSTER, JOEL STOOPS, B.S., <i>University of Maryland</i>	Maryland
WEEKS, HARRY STEPHEN, JR., A.B., <i>West Virginia University, 1949</i>	West Virginia
WEINER, ISRAEL HOWARD, A.B., <i>Johns Hopkins University, 1949</i>	Maryland

SOPHOMORE CLASS, SEPTEMBER 20, 1951 TO JUNE 7, 1952

ABRAMS, SAMUEL JOSEPH, B.A., <i>Johns Hopkins University, 1950</i>	Maryland
AULT, VIRGINIA LEE, B.S., <i>University of Maryland, 1950</i>	Maryland
BAITCH, ARTHUR, <i>University of Maryland</i>	Maryland
BARR, JOHN WILLIAM, B.C.S., <i>University of Georgia, 1948</i>	Maryland
BAUERNSCHUB, GEORGE MARBRY, JR., B.S., <i>Loyola College, 1950</i>	Maryland
BEACH, ROBERT WILLIAM, III, B.A., <i>Yale University, 1950</i>	Maryland
BECHTOLD, JEAN CAROL, <i>University of Maryland</i>	Maryland
BERCK, BEVERLY JEAN, B.A., <i>Asbury College, 1950</i>	Maryland
BERNARDO, ANTHONY A., B.S., <i>University of Maryland, 1950</i>	Rhode Island
BERNTSON, DALE RAMPSTON, B.A., <i>University of Utah, 1949</i>	Utah
BESSON, EDWIN HENRY TAYLOR, B.S., <i>Washington College, 1950</i>	Maryland
BETZ, RICHARD NORMAN, B.A., <i>Johns Hopkins University, 1950</i>	Maryland
BLUMENFELD, HERBERT LEE, <i>University of Maryland</i>	Maryland
BROWN, STUART MORTON, <i>University of Maryland</i>	Maryland
BULLOCK, ALLEN CULPEPPER, JR., B.S., <i>Bates College, 1950</i>	Maine
CARNEY, MARY KATHLEEN, B.A., <i>College of Notre Dame, 1950</i>	Maryland
COHEN, EARL, <i>University of Maryland</i>	Maryland
COYLE, JEAN MARIE, <i>University of Maryland</i>	Maryland
DEFENDINI, EFRAIN ANTONIO, <i>University of Puerto Rico</i>	Puerto Rico
DORAN, WILLIAM FRANCIS, B.S., <i>Allegheny College, 1950</i>	Pennsylvania
EDWARDS, ARTHUR GEORGE, JR., <i>University of Maryland</i>	Maryland
ELLIN, MORTON JACK, <i>University of Maryland</i>	Maryland
EPSTEIN, YALE, <i>University of Maryland</i>	Maryland
EVANS, THEODORE EDWARD, B.S., <i>Loyola College, 1950</i>	Maryland
FIELDS, ANN, B.S., <i>University of Maryland, 1947</i>	Maryland
FITCH, CHARLES THOMAS, B.S., <i>George Washington University, 1950</i>	Maryland
FORREST, OTTO NORMAN, JR., B.A., <i>Duke University, 1949</i>	Maryland
FRAMM, DANIEL HERSCHEL, <i>University of Maryland</i>	Maryland
FREED, MALCOLM FELIX, <i>University of Maryland</i>	Maryland
FRITZ, GEORGE SUPPES, <i>University of Maryland</i>	Maryland
FRUTH, RICHARD LAWRENCE, B.A., M.S., <i>W. Va. University, 1949, 1950</i>	West Virginia
FUNKHOUSER, GEORGE RICHARD, B.S., <i>Franklin and Marshall College, 1950</i>	Maryland
GABLE, WALTER DELAY, <i>University of Maryland</i>	Maryland
GERSWIG, JOHN MONROE, JR., B.A., <i>Johns Hopkins University, 1950</i>	Maryland
GESSNER, JOHN EDWARD, B.S., <i>Loyola College, 1950</i>	Maryland
GLICK, LOUIS MICHAEL, <i>Mt. St. Mary's College</i>	Maryland
GOLDSMITH, RALPH SAMUEL, B.S., <i>Franklin and Marshall College, 1950</i>	Maryland
GUNNING, JEAN JACQUES, B.A., <i>Loyola College, 1950</i>	Maryland
HAMMER, CHARLES JOHN, JR., B.A., <i>Western Maryland College, 1950</i>	Maryland
HARTMAN, JOHN FREDERICK, B.S., <i>Loyola College, 1950</i>	Maryland
HARVEY, HAROLD DEWEY, B.A., B.S., <i>Southwest Missouri State Coll., 1950</i>	Missouri
HATFIELD, WILLIAM HENRY, JR., B.A., <i>St. John's College, 1941</i>	Maryland
HAYES, JAMES WESTCOTT, B.A., <i>Johns Hopkins University, 1950</i>	Maryland
HEADLEY, WILLIAM MCKENDREE, B.S., <i>University of Maryland, 1950</i>	Maryland
HOLCOMBE, ROBERT CALKINS, B.A., <i>Washington University, 1950</i>	Illinois
HOPF, EDWARD WARREN, B.S., <i>Loyola College, 1950</i>	Maryland
HOUPT, WILLIAM PIERRE, B.A., <i>Loyola College, 1950</i>	Maryland
HUNT, THOMAS EDWARD, JR., B.A., <i>West Virginia University, 1950</i>	West Virginia
JONES, RICHARD ARVIN, B.A., <i>Bridgewater College, 1950</i>	Maryland
JONES, ROSELLA EDITH, B.A., <i>Indiana University, 1949</i>	Maryland
KAPLAN, IRVIN BERNARD, B.S., <i>University of Maryland, 1949</i>	Maryland
KEEFE, RAYMOND BERNARD, B.S., <i>College of the Holy Cross, 1950</i>	Connecticut
KIESTER, THOMAS EDWARD, B.A., <i>Wittenberg College, 1950</i>	Ohio
KLOHR, EDWARD SMITH, JR., <i>Western Maryland College</i>	Maryland
KNOTTS, BENJAMIN FRANKLIN, JR., B.A., <i>Duke University, 1950</i>	Florida
LAVINE STANFORD A., B.S., <i>University of Maryland, 1950</i>	Pennsylvania
LEVIN, HERBERT JOSEPH, B.S., <i>University of Maryland, 1950</i>	Maryland
LEVINE, HILBERT MERRILL, B.A., <i>Johns Hopkins University, 1950</i>	Maryland
LEVY, DAVID ALFRED, <i>University of Maryland</i>	Maryland
LOOFF, DAVID HENRY, B.S., <i>State College of Washington, 1950</i>	Washington
MAWHINNEY, CHARLES, JR., B.S., <i>University of Pittsburgh, 1948</i>	Pennsylvania
MCGONIGLE, JOHN JEROME, JR., B.A., <i>Holy Cross College, 1950</i>	Massachusetts
MOSS, IRWIN HAROLD, B.A., <i>Johns Hopkins University, 1949</i>	Maryland

MUELLER, CHARLES HERBERT, JR., B.S., <i>Wheaton College</i> , 1940.....	Maryland
MUELLER, EUGENE ALEXANDER, B.S., <i>Mt. Union College</i> , 1949.....	Ohio
MURPHY, JOHN DAILY, B.A., <i>Centre College</i> , 1950.....	Illinois
NAFZINGER, MOSES LEROY, B.S., <i>Juniata College</i> , 1950.....	Maryland
NANGLE, GERALD FRANCIS, B.A., <i>Ohio State University</i> , 1948.....	Maryland
NOYA, JOSEPH, B.S., <i>Franklin and Marshall College</i> , 1950.....	Maryland
OWENS, DAVID, B.S., <i>Loyola College</i> , 1950.....	Maryland
PACKARD, ALBERT GIBSON, JR., B.A., <i>Johns Hopkins University</i> , 1950.....	Maryland
PATS, ALBERT, B.S., <i>University of Maryland</i> , 1950.....	Maryland
PATTEN, DAVID HALES, B.A., <i>Western Maryland College</i> , 1950.....	Maryland
PEREZ ARZOLA, MIGUEL, <i>University of Puerto Rico</i>	Puerto Rico
RAAB, HELLMUGH, <i>Florida Southern College</i>	Maryland
RAINESS, MORRIS, B.A., <i>Johns Hopkins University</i> , 1950.....	Maryland
ROBERTS, ROBERT REUEL RICHARD, B.S., <i>University of Maryland</i> , 1950.....	Maryland
SCHLENOFF, MILTON, B.S., <i>University of Maryland</i> , 1950.....	Maryland
SHAMER, MARGARET GILLETTE, B.A., <i>Woman's College of the University of North Carolina</i> , 1948.....	Maryland
SHAPIRO, JEROME EDWIN, B.A., <i>Johns Hopkins University</i> , 1949.....	Maryland
SHOCHET, BERNARD RICHARD, <i>University of Maryland</i>	Maryland
SIMPSON, MARSHALL ALBERT, <i>Western Maryland College</i>	Delaware
SMITH, JOSEPH RAYMOND, B.A., <i>Union College</i> , 1950.....	Pennsylvania
SMYTH, JAMES WALTER, B.S., <i>Loyola College</i> , 1950.....	Maryland
OLON, THOMAS JOHN, <i>University of Maryland</i>	New York
TEETER, JAMES HERRING, B.A., <i>Gettysburg College</i> , 1950.....	Maryland
THAMES, RUFUS, B.S., <i>University of Florida</i> , 1950.....	Florida
TRACY, HAROLD WILLIAM, JR., B.S., <i>University of Maryland</i> , 1950.....	Maryland
TRAPNELL, HENRY ROGERS, <i>University of Virginia</i>	Maryland
TUBLIN, IRA NATHAN, B.S., <i>University of Maryland</i> , 1950.....	Maryland
WALL, GEORGE HENRY, B.S., <i>University of Maryland</i> , 1950.....	Maryland
WEISS, HAROLD ROBERT, <i>University of Maryland</i>	Maryland
WELLIVER, DANIEL IRVIN, B.A., <i>Western Maryland College</i> , 1950.....	Maryland
WELTON, WILLIAM ARCH, JR., B.A., <i>Harvard University</i> , 1950.....	West Virginia
WHITE, KENNETH HOWARD, JR., B.A., <i>Youngstown College</i> , 1950.....	Ohio
WHITTAKER, ARTHUR VANCE, B.S., <i>Geneva College</i> , 1949.....	Pennsylvania
WILD, WILLIAM OTTO, B.S., <i>Mt. Union College</i> , 1950.....	Ohio
WOHL, MILTON JACK, B.S., <i>University of Dayton</i>	Maryland
YIM, ROBERT EARL, B.S., <i>University of Nevada</i> , 1950.....	Nevada

FRESHMAN CLASS, SEPTEMBER 20, 1951 TO JUNE 7, 1952

ALBRECHT, JOHN GEORGE, <i>Adelphi College</i>	New York
BAER, GEORGE KOHLER, B.A., <i>Johns Hopkins University</i> , 1951.....	Maryland
BALCERZAK, STANLEY PAUL, JR., <i>University of Pittsburgh</i>	Pennsylvania
BALL, JAMES JOHN, <i>University of Illinois</i>	Maryland
BARNETT, ROBERT MAITLAND, JR., <i>College of Charleston</i>	South Carolina
BENITEZ-VAN RHYN, EUGENIO ENRIQUE, B.S., <i>University of Puerto Rico</i> , 1951.....	Puerto Rico
BEYER, OTTO CHRISTIAN, B.S., <i>Loyola College</i> , 1951.....	Maryland
BLANKMAN, NORMAN, <i>University of Maryland</i>	Maryland
BRADLEY, ALBERT BENNETT, B.A., <i>Johns Hopkins University</i> , 1951.....	Maryland
BRUNSCHWYLER, PHILIP CRAIG, A.B., <i>West Virginia University</i> , 1951.....	West Virginia
BULLAR, FOSTER LUCIUS, JR., A.B., <i>Emory University</i> , 1951.....	Florida
CAMERON, DONALD CHISHOLM, B.A., <i>University of Delaware</i> , 1951.....	Delaware
CAPEL, NEAL CONRAD, B.S., <i>University of Utah</i> , 1951.....	Utah
CAVALLARO, JOSEPH WILLIAM, B.S., <i>University of Maryland</i> , 1950.....	Maryland
CHARLES, RODERICK EDWARD, B.S., <i>Howard University</i> , 1951.....	Maryland
CLAY, WILLIAM HOLMES, B.S., <i>Wake Forest College</i> , 1951.....	Maryland
CLOSE, JAMES MCCLAY, B.A., <i>Virginia Military Institute</i> , 1951.....	Maryland
COHEN, JONAS KOLKER, A.B., <i>University of Maryland</i> , 1950.....	Maryland
COLE, ROGER WILLARD, <i>University of Maryland</i>	Maryland
CORNELL, ROGER DETLEF, B.S., <i>Davidson College</i> , 1951.....	Maryland
COWAN, THOMAS WARNER, <i>University of Maryland</i>	Maryland
COX, EVERARD FRANCIS, B.S., <i>University of Utah</i> , 1951.....	Utah
DALY, MARY VIOLA, B.S., <i>American University</i> , M.S., <i>Iowa State College</i>	Maryland

DANN, THEODORE ALVIN, <i>University of Maryland</i>	Maryland
DARRELL, JOHN JOSEPH, <i>Loyola College</i>	Maryland
DAVIS, THOMAS EDWARD, B.A., <i>Washington & Lee University, 1951</i>	Maryland
DEMOBO, DONALD HOWARD, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
DIEDERICH, HENRY AUGUST, B.A., <i>Wittenberg College, 1951</i>	Ohio
DVORINE, WILLIAM, B.A., <i>Western Maryland College, 1950</i>	Maryland
ENGERS, JOHN ALBERT, JR., B.S., <i>Georgetown University, 1950</i>	Maryland
ESHELMAN, JOSEPH CHALICE, <i>University of Maryland</i>	Maryland
FELDMAN, MARTIN JEROME, B.S., <i>Loyola College, 1951</i>	Maryland
FREDERICK, JAMES NELSON, A.B., <i>West Virginia University, 1951</i>	West Virginia
FRISKEY, GEORGE HAMILTON, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
GALLOWAY, CHARLES BARTON, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
GAULD, JOHN ROSS, A.B., <i>University of Maryland, 1951</i>	Maryland
GELHAUS, VERNON MAYNARD, <i>Loyola College</i>	Maryland
GIFFORD, GEORGE EDMUND, JR., B.S., <i>University of Maryland, 1951</i>	Maryland
GILMORE, GEORGE TRAVERS, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
GOLDBERG, JULIAN ROBERT, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
GOLDNER, MARVIN ALFRED, <i>University of Maryland</i>	Maryland
GOSHORN, GARY SWAN, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
HARRIS, DANIEL BERNARD, B.S., <i>University of Maryland, 1951</i>	Maryland
HECKER, ALVIN WILFRED, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
HERBST, HARRY HERMAN, <i>University of Maryland</i>	Maryland
HIGMAN, HENRY BOOTH, B.A., <i>St. Johns College, 1950</i>	Maryland
HIMMLER, WALTER NORMAN, <i>University of Maryland</i>	Maryland
HOLLISTER, WILLIAM, JR., B.S., <i>Davidson College, 1951</i>	North Carolina
HOPKINS, PETER HOLMES, B.S., <i>Randolph-Macon College, 1951</i>	Maryland
HUDSON, PAUL CARROLL, A.B., <i>Princeton University, 1948</i>	Maryland
HUGHES, JAMES LEWIS, B.S., <i>Georgetown University, 1951</i>	Maryland
IWANTSCH, ALFRED EDMUND, <i>Johns Hopkins University</i>	Maryland
JAMES, WALTER EDWARD, <i>University of Maryland</i>	Maryland
KAPPELMAN, MURRAY MARTIN, <i>University of Maryland</i>	Maryland
KEEFE, WILLIAM PETER, B.S., <i>College of the Holy Cross, 1951</i>	Connecticut
KEEGAN, JAMES THOMAS, B.A., <i>Dartmouth College, 1951</i>	Connecticut
KIMMEL, LOUIS EDMUND, JR., <i>University of Maryland</i>	Maryland
KING, DANIEL DENOON, JR., B.S., <i>College of William and Mary, 1951</i>	Maryland
KIRBY, WILLIAM HENRY, JR., B.E., <i>Johns Hopkins University, 1943, M.S. Johns Hopkins University, 1951</i>	Maryland
KLUGMAN, YALE LEE, <i>University of Maryland</i>	Maryland
KOONS, CHARLES RONALD, B.S., <i>Purdue University, 1951</i>	New Jersey
KRAMER, MORTON DAVID, B.S., <i>University of Maryland, 1950</i>	Maryland
KRONE, WILLIAM FRANK, JR., B.A., <i>Washington and Jefferson College, 1951</i> ...	Maryland
LANCASTER, ROBERT GREGORY, <i>Gonzaga University</i>	Washington
LAVY, NORMAN WILBUR, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
LEIGHTON, RICHARD FREDERICK, B.A., <i>Western Maryland College, 1951</i>	Maryland
LEIPOLD, ERNEST ADAM, JR., <i>Johns Hopkins University</i>	Maryland
LEWANDOWSKI, ANTHONY ADAM, B.A., <i>Loyola College, 1951</i>	Maryland
LIPSITZ, SIDNEY MELBOURNE, JR., B.A., <i>University of Maryland, 1949</i>	Maryland
LONGO, FRANK WALTER, B.S., <i>University of Maryland, 1951</i>	Connecticut
MCGOWAN, JOHN PETER, B.S., <i>St. John's University, 1951</i>	New York
MCINTYRE, DAVID BECK, B.S., <i>University of Maryland, 1951</i>	Maryland
MENDELSON, JACK HAROLD, <i>Johns Hopkins University</i>	Maryland
MIKOLOSKI, VINCENT STANLEY, JR., B.A., <i>Clark University, 1951</i>	Massachusetts
MOONEY, ALBERT LEE, B.S., <i>Washington College, 1943</i>	Maryland
MORNINGSTAR, GEORGE LEO, A.B., <i>West Virginia University, 1951</i>	West Virginia
MORSE, LEONARD JACK, B.A., <i>American International College, 1951</i>	Massachusetts
MUELLER, PAUL GODFREY, <i>Loyola College</i>	Maryland
NATARO, FRANK ROBERT D'ANNO, B.A., <i>Yale University, 1947, M.B.A., Columbia University, 1951</i>	New Jersey
NEELEY, JAMES PATTON, JR., B.S., <i>University of Utah, 1951</i>	Utah
NEWKIRK, MEIGS ALBERT, B.S., <i>Hampden-Sydney College, 1951</i>	Maryland
POLIS, GEORGE NICHOLAS, B.S., <i>Georgetown University, 1951</i>	District of Columbia
PRATT, CHARLES BENTON, JR., A.B., <i>University of North Carolina, 1951</i> ...	North Carolina
RASKIN, JOAN, A.B., <i>Goucher College, 1951</i>	Maryland

SAMORODIN, VIOLET SELMA, <i>University of Maryland</i>	Maryland
SAX, ALBERT MORTON, B.S., <i>Western Reserve University, 1951</i>	Maryland
SCHANBERGER, JOHN EDWARD, B.A., <i>Loyola College, 1951</i>	Maryland
SHIREY, ROBERT GARLAND, B.S., <i>West Virginia University, 1951</i>	West Virginia
SMALL, RICHARD ELWOOD, A.B., <i>Gettysburg College, 1951</i>	Pennsylvania
SNYDER, CLOVIS MARENE, B.A., <i>Washington and Lee University, 1951</i>	Maryland
SPOCK, ALEXANDER, B.S., <i>Loyola College, 1951</i>	Pennsylvania
STAGGERS, PHILLIP GARY, <i>University of Maryland</i>	West Virginia
STERLING, WILLIAM NORTON, B.S., <i>George Washington University, 1951</i>	District of Columbia
STEWART, DONALD WALLACE, B.S., <i>Morgan State College, 1951</i>	Maryland
STITCHER, JOSEPH EDWARD, <i>University of Maryland</i>	Maryland
SUSSMAN, KARL EDGAR, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
THATCHER, LIONEL GILBERT, <i>Miami University</i>	Maryland
THORPE, PETER VAN BOEKEL, A.B., <i>Brown University, 1941</i>	Maryland
TRUCKER, ALBERT LEROY, JR., B.A., <i>Johns Hopkins University, 1951</i>	Maryland
WAGNER, HERBERT CHARLES, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
WALTON, FRED RICHARD, B.A., <i>Indiana University, 1950</i>	Indiana
WARD, ANN MARIE, B.A., <i>Barnard College, 1951</i>	New Jersey
WELLING, CHARLES CLARK, B.S., <i>University of Utah, 1951</i>	Utah
YOUSEM, HERBERT LEONARD, B.A., <i>Johns Hopkins University, 1951</i>	Maryland

INTRAMURAL POSTGRADUATE STUDENTS

July 1, 1951 to June 30, 1952

*SURGICAL ANATOMY

BLAIR, EMIL, M.D.	Savannah, Ga.	<i>Medical College of Georgia</i>
BOKHAIR, L., M.D.	Brooklyn, N. Y.	<i>American University</i>
BRENDLE, WM. K., M.D.	Baltimore, Md.	<i>University of Maryland</i>
CHEN, WALTER T., M.D.	Shanghai, China	<i>Aurora University, Shanghai</i>
CRANE, PAUL S., M.D.	Nashville, Tenn.	<i>Johns Hopkins School of Med.</i>
DALY, HAROLD L., JR., M.D.	Baltimore, Md.	<i>University of Maryland</i>
EZZET, FAIK, M.D.	Baquba, Iraq	<i>Bagdad Royal College of Med.</i>
GILBERT, RICHARD A., M.D.	Baltimore, Md.	<i>University of Virginia</i>
GOEHRS, HOMER RICHARD, M.D.	Houston, Texas	<i>Baylor Univ. College of Med.</i>
GOTSSES, PAUL S., M.D.	Fairmont, W. Va.	<i>Medical College of Virginia</i>
HOULE, LAURENT B., M.D.	Baltimore, Md.	<i>Tufts College Med. School</i>
MASSENBURG, GEORGE Y., M.D.	Macon, Georgia	<i>University of Maryland</i>
NIPKOW, HANS, M.D.	Baltimore, Md.	<i>Ludwig Maximilian Univ., Germany</i>
PANICO, FREDERICK G., M.D.	Atlantic City, N. J.	<i>Univ. of Pennsylvania</i>
SADOWSKY, WALLACE H., M.D.	Perryville, Md.	<i>University of Maryland</i>
SINDELAR, JOSEPH B., M.D.	Baltimore, Md.	<i>Creighton University</i>
TAN, SENG-NGO, M.D.	Manila, Philippines	<i>University of the Philippines</i>
TOMA, JOHN J., M.D.	Hollywood, Cal.	<i>Univ. Budapest, Hungary</i>
WELCOME, HENRY C., M.D.	Baltimore, Md.	<i>Meharry Med. School</i>
WOODWARD, ARTHUR F., M.D.	Baltimore, Md.	<i>University of Maryland</i>

GENERAL ANATOMY

HOWARD, I. RAY, M.D.	Baltimore, Md.	<i>Geo. Washington Univ.</i>
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EYE, EAR, NOSE & THROAT

HEMMINGER, EARL W., M.D.	Ellicott City, Md.	<i>University of Maryland</i>
KLEIMAN, BERNARD S., M.D.	Baltimore, Md.	<i>University of Maryland</i>
MICHAEL, THOMAS, D., M.D.	Baltimore, Md.	<i>Jefferson Medical College</i>

BASIC SCIENCES IN GENERAL PRACTICE

ANNIKO, PAUL H., M.D.	Baltimore, Md.	<i>Univ. of Tartu, Estonia</i>
ARRABAL, CARLOS E., M.D.	Baltimore, Md.	<i>Univ. of Havana, Cuba</i>
BIRD, JOSEPH G., M.D.	Baltimore, Md.	<i>University of Maryland</i>
BLAIR, EMIL, M.D.	Savannah, Ga.	<i>University of Georgia</i>
BLECHMAN, ABRAM J., M.D.	Baltimore, Md.	<i>Medical College of Virginia</i>
BLUM, JOSEPH S., M.D.	Baltimore, Md.	<i>University of Maryland</i>
BORGES, FRANCIS J., M.D.	Baltimore, Md.	<i>University of Maryland</i>
BOSSARD, JOHN W., M.D.	Glen Burnie, Md.	<i>University of Maryland</i>
BRONUSHAS, JOS. B., M.D.	Baltimore, Md.	<i>University of Maryland</i>
CHAMBERS, ROBERT G., M.D.	Baltimore, Md.	<i>Duke University</i>
CONWAY, WILLIAM M., M.D.	Baltimore, Md.	<i>Loyola of Chicago</i>
COOK, ELMER E., JR., M.D.	Baltimore, Md.	<i>University of Maryland</i>
COWLEY, R. ADAMS, M.D.	Baltimore, Md.	<i>University of Maryland</i>
CUNNICK, PAUL C., M.D.	Davenport, Iowa	<i>Iowa State Univ.</i>
D'ANTONIO, JOSEPH, M.D.	Baltimore, Md.	<i>University of Maryland</i>
DEL CAMPO, AUGUSTIN, M.D.	Havana, Cuba	<i>Univ. of Havana, Cuba</i>
DUNN, GEORGE M., M.D.	Washington, D. C.	<i>University of Maryland</i>
ERWIN, JOHN J., M.D.	Baltimore, Md.	<i>University of Maryland</i>
ESCH, VICTOR H., M.D.	Washington, D. C.	<i>Geo. Washington Univ.</i>
FARAINO, FRANK A., M.D.	Baltimore, Md.	<i>University of Maryland</i>
FITZGERALD, JOSEPH C., M.D.	Baltimore, Md.	<i>University of Maryland</i>
FLEMING, ARTHUR RAY, M.D.	Jane Lew, W. Va.	<i>Temple University</i>
FRENKIL, JAMES, M.D.	Baltimore, Md.	<i>University of Maryland</i>
FRIEDMAN, JOSEPH, M.D.	Baltimore, Md.	<i>University of Maryland</i>
FUTTERMAN, PERRY, M.D.	Baltimore, Md.	<i>University of Maryland</i>
GOLDBERG, RAYMOND B., M.D.	Baltimore, Md.	<i>University of Maryland</i>
GOTTLIEB, SINCLAIR S., M.D.	Miami Beach, Fla.	<i>Univ. of Vienna, Austria</i>
HADDIAN, CALVIN Y., M.D.	Beirut, Lebanon	<i>American University of Beirut</i>
HAMBERRY, LEONARD G., M.D.	Baltimore, Md.	<i>University of Maryland</i>
HEALY, JOHN C., M.D.	Baltimore, Md.	<i>University of Maryland</i>
HIGHTOWER, JOHN ALLEN, M.D.	Baltimore, Md.	<i>University of Maryland</i>
JENNINGS, ERWIN R., M.D.	Milledgeville, Ga.	<i>University of Maryland</i>
KERNAHAN, WM. T., JR., M.D.	Chicago, Ill.	<i>Northwestern Univ.</i>
KUDIRKA, JUSTIN, M.D.	Baltimore, Md.	<i>Vytautas De Great, Lithuania</i>
KUZIN, MINO, M.D.	Baltimore, Md.	<i>Charles Univ., Prague</i>
LAMBROS, BYRUTH LENSON, M.D.	Baltimore, Md.	<i>University of Maryland</i>
LANE, JULIAN S., M.D.	Lexington Park, Md.	<i>New York Univ.</i>
LERCHIS, ARNOLD, M.D.	Henryton, Md.	<i>Univ. of Riga, Latvia</i>
MACGIBBON, JOHN B., M.D.	Baltimore, Md.	<i>Univ. of New Zealand</i>
MACULANS, EDGAR M., M.D.	Henryton, Md.	<i>Univ. of Riga, Latvia</i>
MICHAEL, THOMAS D., M.D.	Baltimore, Md.	<i>Jefferson Medical College</i>
MASSENBURG, GEORGE Y., JR., M.D.	Macon, Ga.	<i>University of Maryland</i>
NELSON, ALFRED S., M.D.	Baltimore, Md.	<i>Univ. of Minnesota</i>
PANICO, FREDERICK G., M.D.	Atlantic City, N. J.	<i>Univ. of Pennsylvania</i>
PARKER, ROBERT T., M.D.	Towson, Md.	<i>Johns Hopkins Univ.</i>
PARROTT, FRANK S., M.D.	Goldsboro, N. C.	<i>University of Maryland</i>
PENTON, R. SIM, M.D.	Wetumpka, Ala.	<i>Johns Hopkins Univ.</i>
QUIRINO, CONSTANCE D., M.D.	Manila, Philippines	<i>Univ. of Philippines</i>
RAMIREZ, RAFAEL V., M.D.	Corozal, Puerto Rico	<i>Tulane Univ.</i>
REVER, WILLIAM B., JR., M.D.	Baltimore, Md.	<i>University of Maryland</i>

BASIC SCIENCES IN GENERAL PRACTICE, *continued*

SCHMALZ, ARTHUR H., JR., M.D.	Lincoln, Nebraska	<i>University of Maryland</i>
SCOTT, ROGER D., M.D.	Miami, Florida	<i>University of Maryland</i>
SMITH, SOL, M.D.	Baltimore, Md.	<i>University of Maryland</i>
STEINBACH, STANLEY, M.D.	Baltimore, Md.	<i>University of Maryland</i>
TAN, SENG-NGO, M.D.	Manila, Philippines	<i>Univ. of Philippines</i>
TEACZUK, ILLA, M.D.	Baltimore, Md.	<i>Univ. Innsbruck, Austria</i>
WALKER, LESLIE A., M.D.	Providence, R. I.	<i>University of Rochester</i>
WALLENSTEIN, LEONARD, M.D.	Baltimore, Md.	<i>University of Maryland</i>
WARREN, JOHN M., M.D.	Laurel, Md.	<i>University of Maryland</i>
WILLIAMS, CHARLES H., M.D.	Pikesville, Md.	<i>University of Maryland</i>
WORKMAN, JOSEPH B., M.D.	Baltimore, Md.	<i>University of Maryland</i>

EXPERIMENTAL SURGERY

From Baltimore City Hospitals

FARAINO, FRANK A., M.D.	Baltimore, Md.	<i>University of Maryland</i>
KERNAHAM, WM. T., JR., M.D.	Chicago, Ill.	<i>Northwestern Univ.</i>
LATTIMORE, THOMAS J., JR., M.D.	Macon, Georgia	<i>University of Georgia</i>
PANICO, FREDERICK G., M.D.	Atlantic City, N. J.	<i>University of Pennsylvania</i>

From Mercy Hospital

HAMBERRY, LEONARD G., M.D.	Baltimore, Md.	<i>University of Maryland</i>
REVER, WILLIAM B., JR., M.D.	Baltimore, Md.	<i>University of Maryland</i>

From St. Joseph's Hospital

NIPKOW, HANS, M.D.	Baltimore, Md.	<i>Ludwig Maximilian Univ. Munich</i>
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EXTRAMURAL POSTGRADUATE STUDENTS

PHYSICIANS ATTENDING POSTGRADUATE SEMINAR GIVEN FOR THE MARYLAND
ACADEMY OF GENERAL PRACTICE AT UNIVERSITY HOSPITAL
DECEMBER 6, 1951

EDWARD J. ALESSI, M.D., Baltimore, Maryland	J. BEN DOROGI, M.D., Cardiff, Maryland
WALTER A. ANDERSON, M.D., Baltimore, Maryland	ROBERT E. ENSOR, M.D., Chestertown, Maryland
PHILIBERT ARTIGIANI, M.D., Baltimore, Maryland	ROBERT E. FARBER, M.D., Sparrows Point, Maryland
EUGENE I. BAUMGARTNER, M.D., Oakland, Maryland	JAMES FRENKIL, M.D., Baltimore, Maryland
WILLIAM D. BRAININ, M.D., Capitol Heights, Maryland	JOSEPH FRIEDMAN, M.D., Baltimore, Maryland
JOHN D. BUBERT, M.D., Baltimore, Maryland	SIGMUND GOLDBERG, M.D., Baltimore, Maryland
GEORGE E. BURGTORF, M.D., Ellicott City, Maryland	GEORGE J. HAGEAGE, M.D., Cottage City, Maryland
KATHARENE A. CHAPMAN, M.D., Kensington, Maryland	A. B. HUGHES, M.D., Baltimore, Maryland
JOHN COSTANTINI, M.D., Baltimore, Maryland	LAURISTON L. KEOWN, M.D., Baltimore, Maryland
CHARLES P. CRIMY, M.D., Baltimore, Maryland	LEWIS A. KLEIN, M.D., Washington, D. C.
W. B. CULWELL, M.D., Mt. Airy, Maryland	BENDER B. KNEISLEY, M.D., Hagerstown, Maryland
W. C. CURTIS, M.D., San Angelo, Texas	GEORGE A. KNIPP, M.D., Baltimore, Maryland
	HARRY L. KNIPP, M.D., Baltimore, Maryland

STEPHEN C. MACKOWIAK, M.D., Baltimore, Maryland	HAROLD B. PLUMMER, M.D., Preston, Maryland
STEPHEN LEE MAGNESS, M.D., Catonsville, Maryland	LOUIS J. PRATT, M.D., Towson, Maryland
LAWRENCE MARYANOV, M.D., Cambridge, Maryland	H. O. ROBBINS, M.D., Berlin, Maryland
FERN E. McALLISTER, M.D., Baltimore, Maryland	H. W. SCHEYER, M.D., Baltimore, Maryland
B. A. MOXNESS, M.D., Chevy Chase, Maryland	L. R. SCHOOLMAN, M.D., Frederick, Maryland
J. W. MYEROWITZ, M.D., Baltimore, Maryland	WM. S. SEYMOUR, M.D., Easton, Maryland
NATHAN E. NEEDLE, M.D., Baltimore, Maryland	WALTER H. SHEALY, M.D., Sharpsburg, Maryland
EUGENE F. NEVY, M.D., Dundalk, Maryland	R. KIND SHIRLEY, M.D., Smithsburg, Maryland
SIDNEY NOVENSTEIN, M.D., Funkstown, Maryland	BENJ. I. SIEGEL, M.D., Pikesville, Maryland
CHARLES F. O'DONNELL, M.D., Towson, Maryland	W. GLENN SPEICHER, M.D., Westminster, Maryland
WILLARD A. PARSON, M.D., Halethorpe, Maryland	F. J. TOWNSEND, JR., M.D., Ocean City, Maryland
	JOHN P. URLOCK, JR., M.D., Baltimore, Maryland
	HUGH W. WARD, M.D., Owings, Maryland
	JOHN M. WARREN, M.D., Laurel, Maryland
	IRA M. ZIMMERMAN, M.D., Williamsport, Maryland

SUMMARY OF STUDENTS

September 20, 1951 to June 7, 1952

<i>Medical Students</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
Senior Class.....	94	3	97
Juni r Class.....	92	2	94
Sophomore Class.....	89	6	95
Freshman Class.....	100	4	104
Medical Students.....	375	15	390
Intramural Post-Graduate Students.....	83	4	87
Extramural Post-Graduate Students.....	49	2	51
	507	21	528

GEOGRAPHICAL DISTRIBUTION OF MEDICAL STUDENTS

September 20, 1951 to June 7, 1952

California.....	1	New Jersey.....	7
Connecticut.....	5	New York.....	3
Delaware.....	4	North Carolina.....	19
District of Columbia.....	3	North Dakota.....	1
Florida.....	10	Ohio.....	12
Georgia.....	5	Pennsylvania.....	14
Illinois.....	3	Rhode Island.....	1
Indiana.....	1	South Carolina.....	3
Kansas.....	1	Utah.....	7
Maine.....	3	Virginia.....	1
Maryland.....	244	Washington.....	4
Massachusetts.....	4	West Virginia.....	21
Missouri.....	1	Wisconsin.....	1
Montana.....	1		
Nebraska.....	1		
Nevada.....	2		
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		Puerto Rico.....	9

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(Term beginning July 1, 1952 and ending June 30, 1953)

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 HARRY C. HULL, M.D.
 ALBERT E. GOLDSTEIN, M.D.
 JAMES T. MARSH, M.D., (ex-officio)

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(Here state amount or describe property)

THE UNIVERSITY OF MARYLAND SCHOOL OF NURSING

The University of Maryland School of Nursing offers two programs of study: 1. A Basic Professional Program consisting of four calendar years leading to the degree of Bachelor of Science in Nursing, and 2. A Basic Program consisting of three calendar years leading to the Diploma in Nursing.

The Basic Professional Program extends over a period of four years. Students in this program complete two academic years of study on the College Park campus and the remaining two years on the Baltimore campus. Graduates of this curriculum are prepared for first-level positions in hospital nursing and as beginner-practitioners under supervision in public health nursing.

Graduates who have completed a minimum of two years of college work in other approved colleges may be admitted to this program.

The Basic Program extends over a three year period. This prepares the graduate for general nursing practice in hospitals or homes.

Graduates of either program are eligible to take the Maryland State Board Examinations for nurses.

The School of Nursing makes every effort to conform to the catalogue announcements, never-the-less the School reserves the right to adapt these programs to current needs.

For information regarding admissions, address inquiries to the Dean of the School of Nursing, University of Maryland, Baltimore 1, Maryland.

MERCY HOSPITAL SCHOOL OF NURSING

The Mercy Hospital School of Nursing was established 1899 and incorporated on December 23, 1901. It is an integral part of Mercy Hospital and is under the same government. It is accredited by the Maryland State Board of Examiners of Nurses and the National Nursing Accrediting Service.

The University of Maryland, and Mount Saint Agnes College, in affiliation with

the Mercy Hospital School of Nursing, offer a five year combined academic and nursing program. The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland and Mount Saint Agnes College, and to the diploma of the Mercy Hospital School of Nursing.

Mercy Hospital affords exceptional advantages for the education of nurses. It is a general hospital containing 348 beds, and offers opportunities for a thorough and varied experience. By its institutional affiliation with the University of Maryland it secures professors who give to the student the results of their training and experience in the fields of the medical and related sciences.

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